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BC EDITION
APRIL 2000



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Don't compare C++ to Java

In the February 2000 issue, your book seems to imply Java is better than C++. One plus is that you say thought comparison applies to apples and oranges to oranges. More than 90 percent of software houses that create commercial-grade applications will code it in C/C++. As I am sure you know, Java has its place and C++ has its place. To compare the two together as a head-to-head run is wrong and misleading. Java is good, but sometimes and limited with flow... can you imagine cod-

ing Windows 2000 or the Mac OS X as Java? The words clean, safe, and limited feature are an understatement.

Please compare Java to the future, as used stated or understood people will get the wrong picture of the issue—especially over Java and C++ do not compare. They are different tools... for different purposes.

Sean R. Hanks

If anyone I acknowledge your position C/C++ is currently used for most applications software

development and I have used it in other reviews. I point out Java's weaknesses—such as the rapid rate of change of the API and consequent bugs. I have also pointed out their runtime performance for Java will likely never catch up with C/C++ because the garbage collector, security model, and automatic memory management checks put it at a disadvantage relative to C/C++ systems, which do not have to perform these services. Perhaps your counter argument will be that I don't want these services, but others do. When I

reviewed through Java last year all the developers I talked to were unwilling to code for the following reasons:

1. Java allows them to code in their natural script as well as accommodating their natural script in the system they were developing to them.
2. Java allows them to deliver code in their natural script as well as accommodating their natural script in the system they were developing to them.
3. Java allows them to develop highly secure and reliable Web or LAN-based applications that are not easily hacked.
4. Java allows them to develop applications faster (from 20 to 200 percent faster) than ever before against a wide range of languages but most notably C/C++.

In bottom line, Java and C++ do compare.

Now before presenting with the concept of Java as clean, safe, and limited feature, I say you to go to the Java website and see the download and try out a few copy of "Significantly" enhanced, a pure Java application. Against the C/C++-developed competitors, Significantly is definitely not clean, safe or fast but Java—so is the very opposite.

Finally, I have been prepared to see some major Java applications compiled to native code (but not providing all the Java services, such as Unicode, integrity checks, and garbage collection) using Java's Java compiler. Let me state you, these applications were already fast.

My business is not just selling readers where things are new in IT and computing, but where they will be in the next few years. Java, Significantly, Java Applications (JVA), computer assembly, and generation of programs from performance to where things will be. That's all.

Understand computing

I've just read the March letter from the editor ("I just want it to work") and completely understand your point of view. It really does worry and cause layers of computers "not get so frustrated."

You used the term "user friendly" and, as always when I am due, I studied broadly Computer and software manufacturers have adopted that label in their hardware design for years. I think it's time to admit that computers are the most user-friendly products currently available (second place may go to VCRs). I suppose automobiles were also unfairly in their early years when they had to be created by hand and pushed through most chagrinous. I think we are now experiencing the birth-pangs of a relaxed technology, which is not to improve, just to do it with.

The only question is why should the greatest period of this product amount to design in an age that has increased in "speed and fast moving"? On second thought, maybe I've answered my own question. Because change is in rapid in computer hardware and software, and even more constantly frustrated by a long-term user who never really had when you get the bang of their new computer and hence the obsolescence of the software that once before was "user and improved" products.

George Dunbar

More security

I recently read Jeff Evans last issue titled "They are not lost" and agree that when you're not... Continued on page 48

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A first look at Palm's colour handheld

Finally colour! The new Palm IIIc has an 8 in. 256-colour active matrix display from Sharp, along with a new colour-enabled operating system. At 192 g (6.8 oz.), the Palm IIIc is the lightest colour handheld on the market, according to Palm Canada

(<http://www.palm.com>), the subsidiary recently created by Xerox Canada.

Palm Canada rolled out the new model in mid-July, but *The Computer Paper* had the opportunity to look at the device about a month earlier.

We were able to play with the IIIc to find out what difference a colour display makes to the Palm experience. On first viewing, it is a bit underwhelming. After some time spent using it, however, small things become apparent—

effects are enhanced in red, and coloured text

is highlighted in yellow, for example—like magic you see how much better the colour looks on the display. It's not until you return to a Palm with a monochrome screen that you fully realize the impact of colour.

The response expects the Palm IIIc to appeal to those who create images, play graphics-intensive games, or prefer to consume information by colour, and to those who use applications in which colour redundancy is a key feature—mapping, and making checks or electronic documents, for example.

The Palm IIIc comes with a suite of colour software, including Web Connect Manager for offline viewing of Web content, All-in-One Go, an image viewing and scanning program, powerOn, an enhanced calculator, and a colour background game.

The Palm IIIc has 4 MB of RAM, plus 2 MB of reconfigurable Palm memory. Additional binary grants up to two weeks' worth of power, and can be fully recharged in 90 minutes. It comes with a HotSync cradle and a DV-21 adaptor to connect with your PC. A USB adaptor can be purchased separately. The Palm IIIc has an estimated street price of \$679.

Palm OS 3.5

During the new display is Palm OS 3.5. The OS upgrade will be backward-compatible for Palm IIIc, V and VI models, with the exception of the Palm IIIx, which does not have full ROM. Upgrading to the latest OS will not, of course, make the monochrome display or other Palm device colour, but it does offer some benefits. It includes an new agenda view that combines tasks and appointments, a record-elimination option that allows you to close a contact and change the same field, rather than having to input common information twice for two people from the same company, an on-screen menu bar that removes the need to press the menu button, faster quickdial reports, and an improved private record feature that allows you to see the phonebook but not the contents of recent records. The company also says HotSync and infrared data transfers are faster under Palm OS 3.5.

Palm IIIc

On October 6, 1999, the colour model, Palm announced the release of a new monochrome model, the Palm IIIx.

The Palm IIIx is an enhanced version of the Palm IIIc, with 4 MB of memory (compared to 2 MB in older models), and is aimed at power users. According to Michael Madewell, the new general manager of Palm Canada, who preceded the launch in Toronto, "We believe the new Palm IIIc product offers an ideal combination of functionality, flexibility and value for people regardless of whether they're using it for business or personal use." The Palm IIIx has an estimated retail price of \$779.

Continued on page 40



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WHAT'S NEW

Nokia launches new mobile phones

HAWAII, Germany—Cell phone giant Nokia City (Helsinki) and has taken the range of its new GSM/GPRS mobile phones, starting with the express intention of replacing all its competitors.

Among its several new products, Nokia unveiled its Nokia 3310 GSM/GPRS 900 MHz/1,800 MHz in Supramax, which it says is the company's new flagship premium mobile handset. Scheduled to ship this summer, the Nokia 3310 is designed for those in North America market carrying its own networks in GSM 900 territories and new views.

The handset, which has a flip-style handset displaying the Nokia 3310 logo, is designed to be a multi-tasker. When the phone is open, it can be used as a mobile phone. When the phone is closed, it can be used as a PDA. The phone can be used as a mobile phone, or as a PDA. The phone can be used as a mobile phone, or as a PDA.

—Nokia/Finland



IBM's EOM aims to simplify computing

IBM (Armonk, N.Y.) has unveiled its IBM Personal Systems Group's new EOM (Enterprise Open Model) plan, to make computing easier. "What does it take to really make computing a real-world solution?" asked Peter Horvath, director of technology development for the group, at a briefing with IBM.

In answering his own question, Horvath outlined the scope of EOM design, showing four products that will be introduced by mid-1998. EOM is about 100 megabytes, that the PC is fast becoming a device that sits on the edge of the network. As the role of the PC changes, so do users' expectations. Horvath said EOM devices would be "smaller and simpler, not just smaller, but ready to go." For example, to address a customer, IBM is developing secure chip technology to be embedded on the motherboard, which will address specific e-business needs for authentication, secure signing, etc.

Horvath also talked about "a lifestyle evolution" in the next wave of computers, to help manage the work/life and home/work transition that may come in a mobile device on a wireless PC. "We do have things here to be part of

a separate desktop?" he asked, the answer being they shouldn't have to.

Horvath also showed four new yet-to-be-named platforms that will be introduced by mid-year as part of a new IBM brand. The first is a new desktop computer, introduced in 1997. It is a new design and includes fast memory as it can be loaded up locally, or via LAN over the network. The second is a "business-to-business-to-consumer product" that will go to customers, wherever it is, and then it will use their infrastructure to provide their customers. The third is a new design, for example, could provide a laptop to start as a kind of integrated hub appliance to access the firm's data and quickly and easily. The device will undergo trials in the U.S. in April. Participants in the pilot include Lyons, IBM and Telcel.

The fourth is a new design, for example, could provide a laptop to start as a kind of integrated hub appliance to access the firm's data and quickly and easily. The device will undergo trials in the U.S. in April. Participants in the pilot include Lyons, IBM and Telcel.

—David Straits

1 GHz Athlon-powered PCs on the way

On March 6, San Jose, Calif.-based chipmaker Advanced Micro Devices (AMD) announced that its 1 GHz Athlon processor (http://www.amd.com) will be used in commercially available systems from Compaq and Gateway.

AMD's dual Intel, 660 also has been trying to break the barrier and is expected to release its own 1 GHz Pentium III processor before the end of March. Both AMD and Intel have been looking about 1000 speeds for months. AMD is expected to release its first 1 GHz Athlon processor in early 1998.

AMD says systems based on the new Athlon processor will appeal to business and power PC users with highly demanding applications. In addition to the 1 GHz processor, AMD also announced availability of 100 MHz and 150 MHz Athlon models.

—PCF Staff



E-Vector first in HP's e-PC line



HP (Palo Alto, Calif.) has unveiled the e-Vector, the first business computer in its e-PC line. The e-Vector is a laptop-sized device with a 15-inch screen, a 10.4-inch screen, and a 10.4-inch screen. The e-Vector is a laptop-sized device with a 15-inch screen, a 10.4-inch screen, and a 10.4-inch screen.

According to product manager Mike O'Connell, HP worked to satisfy three customer groups with the e-Vector: entry-level customers, IT departments, and business. O'Connell said the e-Vector's sleek design and lack of floppy drive or expansion slots meant that management in IT departments would have less to worry about. The e-Vector starts at \$1,999. Among the features that improve the manageability and security of a corporate environment, are a "password key" for all PCs on the network, and a port-sharing system to prevent unauthorized access to networked devices.

The e-Vector will be available with either a Pentium III processor, and also with Windows 95 or Windows 98 (pre-release).

—David Straits



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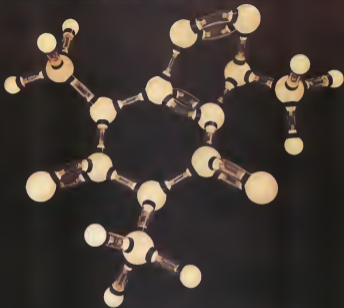


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Ultra DMA-66 IDE Hard Drive

Ultra DMA-66 IDE Hard Drive

Celeron - All-In-One

PC Processor 600MHz 64MB Cache

4MB DRAM 144 Pin DIMM (PC 133MHz)

1.44MB Floppy Drive

32MB Ultra DMA-66 CD-ROM/DVD Read Drive

Ultra DMA-66 IDE Hard Drive

Ultra DMA-66 IDE Hard Drive

Ultra DMA-66 IDE Hard Drive

Ultra DMA-66 IDE Hard Drive

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433MHz w/128KB L2 ... \$ 845

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ATI 3D Rage 128MB ... \$ 149

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ATI 3D Rage 128MB ... \$ 149

ATI 3D Rage 128MB ... \$ 149

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Model	#Ppt	Rate	Price
Chitpage 8w	8	600dpi	\$309
Chitpage 8w	8	600x600	\$389
Chitpage 10w	10	600dpi	\$450
Chitpage 12w	12	600x600	\$525
Chitpage 15w	15	600dpi	\$1375
Chitpage 24w	24	600x600	\$1830

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Model	MM	CPS	Pts	Price
ML164	300	9	5300	
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ML329/351	435	9	\$205/805	
ML360/391	390	24	\$225/705	
ML394/404	407	24	\$155/1605	
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• 48KHz Audio (16-bit)
• 100% Analog
• 16-bit Stereo
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MS Windows 95

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• Install without 3.5 floppy

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• 3dfx Voodoo
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• 100% Analog
• 100% Analog

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fujitsu

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HL-1260R Series

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Video

Video

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4 X DVD ROM
30Kbps Fax Modem
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30Kbps Fax Modem
15" VGA TFT Display
4.0GB 5400 Interface
Video Card - NTSC

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16.1GB Hard Drive
4 X DVD ROM
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15" VGA TFT Display
4.0GB 5400 Interface
Video Card - NTSC

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4.0GB 5400 Interface
Video Card - NTSC

XC-15 \$509.99

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16.1GB Hard Drive
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30Kbps Fax Modem
15" VGA TFT Display
4.0GB 5400 Interface
Video Card - NTSC

ThinkPad IBM

Intel Celeron 400MHz MMX
64MB Memory
4.0GB Hard Drive
30Kbps Fax Modem
14.1" TFT Display

Model	CPU	RAM	HD	CD	Display	Price
11400	C400	32MB	4.0GB	30X	10.4"	\$1,775
11421	C400	32MB	8GB	30X	10.4"	\$2,210
11480	C400	64MB	8.0GB	DVD 14.1" TFT	\$2,550	
11540	C400	64MB	8.0GB	30X	12.1" TFT	\$2,585
11541	C400	64MB	8GB	30X	10.4"	\$2,075
240	C400	64MB	8.0GB	10.4" TFT	\$2,245	
240	C400	64MB	8.0GB	10.4" TFT	\$2,090	
3000	P3-400	64MB	12GB	34X	14.1" TFT	\$4,100
3000	P3-400	64MB	12GB	34X	14.1" TFT	\$4,680
3000	P3-400	64MB	8GB	34X	13.3" TFT	\$4,460
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,125
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,320
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,760
3000	P3-400	64MB	12GB	DVD 13.3" TFT	\$5,255	

TOSHIBA

Satellite 2610DVD

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8GB Hard Drive
Trident Graphics w/2 SMD
12.1" TFT Display
30Kbps Fax Modem
DVD-ROM Drive
Built-In Speaker System

Model	CPU	RAM	HD	CD	Display	Price
2600GT	P3-300	64MB	8.4GB	30X	11"	\$4,650
2600T	P3-300	64MB	12GB	30X	11"	\$4,425
2600S	P3-300	64MB	4GB	12.1" TFT	\$4,810	
2610GT	P3-400	64MB	8.0GB	24X	12.1" TFT	\$5,210
2610GT	P3-400	64MB	8.0GB	30X	10.4" TFT	\$2,940
4070CS	Celeron	64MB	4.0GB	24X	13.3" TFT	\$2,485
4070VD	Celeron	64MB	8.0GB	DVD 14.1" TFT	\$3,600	
4270VCS	Celeron	64MB	12GB	DVD 15.0" TFT	\$4,585	
4270VCS	Celeron	64MB	12GB	DVD 14.1" TFT	\$4,150	
4300	P3-400	64MB	12GB	DVD 14.1" TFT	\$4,900	
5100	P3-400	64MB	12GB	DVD 14.1" TFT	\$5,480	
5100	P3-400	1GB/8.0GB	DVD 14.1" TFT	\$5,310		

INTEGRAL

Intel Celeron 400MHz MMX
64MB Memory
4.0GB Hard Drive
30Kbps Fax Modem
14.1" TFT Display

Model	CPU	RAM	HD	CD	Display	Price
11400	C400	32MB	4.0GB	30X	10.4"	\$1,775
11421	C400	32MB	8GB	30X	10.4"	\$2,210
11480	C400	64MB	8.0GB	DVD 14.1" TFT	\$2,550	
11540	C400	64MB	8.0GB	30X	12.1" TFT	\$2,585
11541	C400	64MB	8GB	30X	10.4"	\$2,075
240	C400	64MB	8.0GB	10.4" TFT	\$2,245	
240	C400	64MB	8.0GB	10.4" TFT	\$2,090	
3000	P3-400	64MB	12GB	34X	14.1" TFT	\$4,100
3000	P3-400	64MB	12GB	34X	14.1" TFT	\$4,680
3000	P3-400	64MB	8GB	34X	13.3" TFT	\$4,460
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,125
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,320
3000	P3-400	64MB	12GB	34X	13.3" TFT	\$4,760
3000	P3-400	64MB	12GB	DVD 13.3" TFT	\$5,255	

TOSHIBA

Satellite 2610DVD

Intel Celeron 400MHz
64MB RAM exp. to 1GB
8GB Hard Drive
Trident Graphics w/2 SMD
12.1" TFT Display
30Kbps Fax Modem
DVD-ROM Drive
Built-In Speaker System

Model	CPU	RAM	HD	CD	Display	Price
2600GT	P3-300	64MB	8.4GB	30X	11"	\$4,650
2600T	P3-300	64MB	12GB	30X	11"	\$4,425
2600S	P3-300	64MB	4GB	12.1" TFT	\$4,810	
2610GT	P3-400	64MB	8.0GB	24X	12.1" TFT	\$5,210
2610GT	P3-400	64MB	8.0GB	30X	10.4" TFT	\$2,940
4070CS	Celeron	64MB	4.0GB	24X	13.3" TFT	\$2,485
4070VD	Celeron	64MB	8.0GB	DVD 14.1" TFT	\$3,600	
4270VCS	Celeron	64MB	12GB	DVD 15.0" TFT	\$4,585	
4270VCS	Celeron	64MB	12GB	DVD 14.1" TFT	\$4,150	
4300	P3-400	64MB	12GB	DVD 14.1" TFT	\$4,900	
5100	P3-400	64MB	12GB	DVD 14.1" TFT	\$5,480	
5100	P3-400	1GB/8.0GB	DVD 14.1" TFT	\$5,310		

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TOP SECRET//SI

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P11-535MHz	54
P11-600MHz	54
P11-647MHz	54
P11-733MHz	54
P11-800MHz	54

	General	Manpower Group says it will cut 100 jobs	11:00 AM
	Construction	Manpower Group says it will cut 100 jobs	11:00 AM
	Construction	Manpower Group says it will cut 100 jobs	11:00 AM
	Construction	Manpower Group says it will cut 100 jobs	11:00 AM
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	Construction	Manpower Group says it will cut 100 jobs	11:00 AM

Monitors

[illegible]

	Panel A	Panel B	Panel C	Panel D	Panel E
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Product Features	HP Z440	HP Z440	HP Z440	HP Z440	HP Z440	HP Z440
Core Operating System	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7	Windows 7
Application Software	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010
Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010	Microsoft Office 2010
Advanced LCD	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED
TVS Imaging	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED
Available With	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED
Channel Members	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED
Storage Capacity	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED
Operating System	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED	23.8" WLED

Registration No.

- [illegible]

PWT-500MHz.	\$2,745
PWT-600MHz.	\$2,790
PWT-650MHz.	\$2,975
PWT-700MHz.	\$3,105
PWT-750MHz.	\$3,260

Outlook #505

Model	Box Width	Box Size	Monotonicity	Box Size	PS
1. L ₁	0.10	10000/1000	10.87	10.70/1000	0
2. L ₁	0.10	10000/1000	10.87	10.70/1000	0
3. L ₁	0.10	10000/1000	10.87	10.70/1000	0
4. L ₁	0.10	10000/1000	10.87	10.70/1000	0
5. L ₁	0.10	10000/1000	10.87	10.70/1000	0
6. L ₁	0.10	10000/1000	10.87	10.70/1000	0
7. L ₁	0.10	10000/1000	10.87	10.70/1000	0
8. L ₁	0.10	10000/1000	10.87	10.70/1000	0
9. L ₁	0.10	10000/1000	10.87	10.70/1000	0
10. L ₁	0.10	10000/1000	10.87	10.70/1000	0
11. L ₁	0.10	10000/1000	10.87	10.70/1000	0
12. L ₁	0.10	10000/1000	10.87	10.70/1000	0
13. L ₁	0.10	10000/1000	10.87	10.70/1000	0
14. L ₁	0.10	10000/1000	10.87	10.70/1000	0
15. L ₁	0.10	10000/1000	10.87	10.70/1000	0
16. L ₁	0.10	10000/1000	10.87	10.70/1000	0
17. L ₁	0.10	10000/1000	10.87	10.70/1000	0
18. L ₁	0.10	10000/1000	10.87	10.70/1000	0
19. L ₁	0.10	10000/1000	10.87	10.70/1000	0
20. L ₁	0.10	10000/1000	10.87	10.70/1000	0
21. L ₁	0.10	10000/1000	10.87	10.70/1000	0
22. L ₁	0.10	10000/1000	10.87	10.70/1000	0
23. L ₁	0.10	10000/1000	10.87	10.70/1000	0
24. L ₁	0.10	10000/1000	10.87	10.70/1000	0
25. L ₁	0.10	10000/1000	10.87	10.70/1000	0
26. L ₁	0.10	10000/1000	10.87	10.70/1000	0
27. L ₁	0.10	10000/1000	10.87	10.70/1000	0
28. L ₁	0.10	10000/1000	10.87	10.70/1000	0
29. L ₁	0.10	10000/1000	10.87	10.70/1000	0
30. L ₁	0.10	10000/1000	10.87	10.70/1000	0
31. L ₁	0.10	10000/1000	10.87	10.70/1000	0
32. L ₁	0.10	10000/1000	10.87	10.70/1000	0
33. L ₁	0.10	10000/1000	10.87	10.70/1000	0
34. L ₁	0.10	10000/1000	10.87	10.70/1000	0
35. L ₁	0.10	10000/1000	10.87	10.70/1000	0
36. L ₁	0.10	10000/1000	10.87	10.70/1000	0
37. L ₁	0.10	10000/1000	10.87	10.70/1000	0
38. L ₁	0.10	10000/1000	10.87	10.70/1000	0
39. L ₁	0.10	10000/1000	10.87	10.70/1000	0
40. L ₁	0.10	10000/1000	10.87	10.70/1000	0
41. L ₁	0.10	10000/1000	10.87	10.70/1000	0
42. L ₁	0.10	10000/1000	10.87	10.70/1000	0
43. L ₁	0.10	10000/1000	10.87	10.70/1000	0
44. L ₁	0.10	10000/1000	10.87	10.70/1000	0
45. L ₁	0.10	10000/1000	10.87	10.70/1000	0
46. L ₁	0.10	10000/1000	10.87	10.70/1000	0
47. L ₁	0.10	10000/1000	10.87	10.70/1000	0
48. L ₁	0.10	10000/1000	10.87	10.70/1000	0
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50. L ₁	0.10	10000/1000	10.87	10.70/1000	0



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CPUs with frequency at 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ATI 8440 32MB AGP Video
50x120 PCI Voice Modem
Sound Master PCI 927
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Sony 48x120 CD-ROM
ATI 8440 32MB AGP Video
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Sound Master Live! Video
80-Watt Stereo Speakers
10" Mid-Tower 200w Case
Fujitsu 8125 P502 Keyboard
A-Open P502 Mouse w/Pad
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Fujitsu 13.6GB Hard Drive
Sony 48x120 CD-ROM
ATI 128 32MB AGP
50x120 PCI Voice Modem
Sound Master Live! Video
80-Watt Stereo Speakers
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Fujitsu 8125 P502 Keyboard
A-Open P502 Mouse w/Pad
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Panasonic 48x120 CD-ROM
Verbatim 2000 16MB AGP
50x120 PCI Voice Modem
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A-Open 16-bit 3D Sound
80-Watt Stereo Speakers
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Fujitsu 8125 P502 Keyboard
A-Open P502 Mouse w/Pad
MS Windows 95 SE CD
15" TFT 1256 20 Monitor

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Intel Celeron 400MHz
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50x120 DVD-ROM Drive
50x120 PCI Voice Modem
A-Open 16-bit 3D Sound
80-Watt Stereo Speakers
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MS Windows 95 SE CD
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Active Matrix Display
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50x120 DVD-ROM Drive
50x120 PCI Voice Modem
A-Open 16-bit 3D Sound
80-Watt Stereo Speakers
10" Mid-Tower 200w Case
Fujitsu 8125 P502 Keyboard
A-Open P502 Mouse w/Pad
MS Windows 95 SE CD
15" TFT 1256 20 Monitor

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15.1" TFT 200A
Active Matrix Display
Intel Celeron 400MHz
32MB SDRAM Memory
4.4GB Hard Disk Drive
48x120 CD-ROM Drive
50x120 DVD-ROM Drive
50x120 PCI Voice Modem
A-Open 16-bit 3D Sound
80-Watt Stereo Speakers
10" Mid-Tower 200w Case
Fujitsu 8125 P502 Keyboard
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Revisiting the family network

A year ago, TDP looked at a relatively new networking technology that allowed you to build a network at home by plugging into existing telephone cabling. That technology, HomePNA, continues to advance, with faster speeds and USB options for this "no new wires" network solution

By Reed Lavin

If you are like me, appealing to a one-year-old to create a small network, I would like to tell the old computer but it isn't worth much and the demand for computer time in my home is high enough to warrant a second machine. However, no one will want to use the old computer if it doesn't have an Internet connection and the ability to print. It would also be great if people didn't have to interrupt me another to get at a document or other file from the new PC.

The "network" also looks as useful, but it's about the same time, so does a very small headache. Please like "network configuration" and "server software" for my network, while trying to get the old computer to work, or at the other, with a dial-up and a network cable in the cable, and the looking for a solution here or both.

One home networking system that is very appealing is a phone line network. In the same system, you use your existing phone plugs. The network also has a data transfer rate (the data communication frequency that doesn't affect your regular telephone function). The

same you can talk on the telephone while data flows between your computer simultaneously and on the same line.

The applications that allow this to occur were developed by the HomePNA (Home Phoneline Networking Alliance), a US organization of more than 115 technology companies (you can find out more about it and its members at <http://www.homepna.org>).

In the May 1999 issue, The Computer Paper reviewed two HomePNA network kits (Home PC Link Kit, from Best Data, and HomePNA Phoneline, from Diamond Multimedia). Both products come with two network interface cards (NICs), a couple of phone cables, and software. Both were also HomePNA 1.0 products, and that had maximum data transfer rates of 1 Mbps. In December 1999, the second version of the specifications, HomePNA 1.2, was released with the maximum data transfer rate jumping to 10 Mbps. The change provides a phone line network with data communication speeds similar to business networks (Ethernet, for example, operates at 10 Mbps).

What's available

There are a number of phone line network

products available via the Internet. However, my research turned up two companies in Canada that offer this type of product as well.

- HomeConnect, from 3Com Corp. <http://www.3com.com>
- Home PC Link, from Best Data Products <http://www.bestdata.com>
- Network as a Box, from D Link Canada <http://www.dlink.ca>
- HomePNA Phone Network, from Diamond Multimedia Systems <http://www.mediadata.com>
- AnyPoint Home Network, from Intel Corp. <http://www.intel.com>

All of these kits, with the exception of Best Data Products' Home PC Link, are available as second-generation, HomePNA 2.0 versions. Intel's 10 Mbps AnyPoint Home Network should be available by the time you read this. The other remaining products are already in retail stores. They all connect to one card and are mostly priced at around \$200, with no additional cost for connecting a third PC to a network (most at about half that).

Installing

I have tried two of these packages and found setup very pretty simple. If you can install a PC card, this should be a piece of cake. The only difficulties you might experience are with the Internet sharing software. On a number of occasions, one machine or the other has interrupted the sharing software off, and it has had to be re-installed. Not a big deal. Also, you need to put your thought into how you set up the network. You have to designate one PC as the host, and a few rules on for the other PCs to use or access the printer. Overall, it's quite simple.

The future

Incidentally, the HomePNA is making advances. The alliance recently announced an addition of the original 1 Mbps standard to Europe. Member companies there have started manufacturing HomePNA products. These efforts from North American HomePNA products to the different technology standards, but their adoption looks well for the technology over all.

On this site of the Atlantic, Diamond Continued on page 49

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2. **ASUS 100MHz 386 RAM** \$220
3. **ASUS 100MHz 386 RAM** \$485
4. **COMPAQ 100MHz 386 RAM** \$159
5. **COMPAQ 100MHz 386 RAM** \$149
6. **HP 100MHz 386 RAM** \$379.95
7. **ASUS 100MHz 386 RAM** \$409.95
8. **ASUS 100MHz 386 RAM** \$329
9. **HP 100MHz 386 RAM** \$327
10. **COMPAQ 100MHz 386 RAM** \$359

HARD DRIVES

1. 100MHz 386 RAM

Model	Capacity	Price	Model	Capacity	Price
100MHz 386 RAM	100MB	\$397.95	100MHz 386 RAM	100MB	\$397.95
100MHz 386 RAM	200MB	\$409.95	100MHz 386 RAM	200MB	\$409.95
100MHz 386 RAM	400MB	\$429.95	100MHz 386 RAM	400MB	\$429.95
100MHz 386 RAM	800MB	\$449.95	100MHz 386 RAM	800MB	\$449.95
100MHz 386 RAM	1600MB	\$469.95	100MHz 386 RAM	1600MB	\$469.95
100MHz 386 RAM	3200MB	\$489.95	100MHz 386 RAM	3200MB	\$489.95
100MHz 386 RAM	6400MB	\$509.95	100MHz 386 RAM	6400MB	\$509.95
100MHz 386 RAM	12800MB	\$529.95	100MHz 386 RAM	12800MB	\$529.95
100MHz 386 RAM	25600MB	\$549.95	100MHz 386 RAM	25600MB	\$549.95
100MHz 386 RAM	51200MB	\$569.95	100MHz 386 RAM	51200MB	\$569.95
100MHz 386 RAM	102400MB	\$589.95	100MHz 386 RAM	102400MB	\$589.95
100MHz 386 RAM	204800MB	\$609.95	100MHz 386 RAM	204800MB	\$609.95
100MHz 386 RAM	409600MB	\$629.95	100MHz 386 RAM	409600MB	\$629.95
100MHz 386 RAM	819200MB	\$649.95	100MHz 386 RAM	819200MB	\$649.95
100MHz 386 RAM	1638400MB	\$669.95	100MHz 386 RAM	1638400MB	\$669.95
100MHz 386 RAM	3276800MB	\$689.95	100MHz 386 RAM	3276800MB	\$689.95
100MHz 386 RAM	6553600MB	\$709.95	100MHz 386 RAM	6553600MB	\$709.95
100MHz 386 RAM	13107200MB	\$729.95	100MHz 386 RAM	13107200MB	\$729.95
100MHz 386 RAM	26214400MB	\$749.95	100MHz 386 RAM	26214400MB	\$749.95
100MHz 386 RAM	52428800MB	\$769.95	100MHz 386 RAM	52428800MB	\$769.95
100MHz 386 RAM	104857600MB	\$789.95	100MHz 386 RAM	104857600MB	\$789.95
100MHz 386 RAM	209715200MB	\$809.95	100MHz 386 RAM	209715200MB	\$809.95
100MHz 386 RAM	419430400MB	\$829.95	100MHz 386 RAM	419430400MB	\$829.95
100MHz 386 RAM	838860800MB	\$849.95	100MHz 386 RAM	838860800MB	\$849.95
100MHz 386 RAM	1677721600MB	\$869.95	100MHz 386 RAM	1677721600MB	\$869.95
100MHz 386 RAM	3355443200MB	\$889.95	100MHz 386 RAM	3355443200MB	\$889.95
100MHz 386 RAM	6710886400MB	\$909.95	100MHz 386 RAM	6710886400MB	\$909.95
100MHz 386 RAM	13421772800MB	\$929.95	100MHz 386 RAM	13421772800MB	\$929.95
100MHz 386 RAM	26843545600MB	\$949.95	100MHz 386 RAM	26843545600MB	\$949.95
100MHz 386 RAM	53687091200MB	\$969.95	100MHz 386 RAM	53687091200MB	\$969.95
100MHz 386 RAM	107374182400MB	\$989.95	100MHz 386 RAM	107374182400MB	\$989.95
100MHz 386 RAM	214748364800MB	\$1009.95	100MHz 386 RAM	214748364800MB	\$1009.95
100MHz 386 RAM	429496729600MB	\$1029.95	100MHz 386 RAM	429496729600MB	\$1029.95
100MHz 386 RAM	858993459200MB	\$1049.95	100MHz 386 RAM	858993459200MB	\$1049.95
100MHz 386 RAM	1717986918400MB	\$1069.95	100MHz 386 RAM	1717986918400MB	\$1069.95
100MHz 386 RAM	3435973836800MB	\$1089.95	100MHz 386 RAM	3435973836800MB	\$1089.95
100MHz 386 RAM	6871947673600MB	\$1109.95	100MHz 386 RAM	6871947673600MB	\$1109.95
100MHz 386 RAM	13743895347200MB	\$1129.95	100MHz 386 RAM	13743895347200MB	\$1129.95
100MHz 386 RAM	27487790694400MB	\$1149.95	100MHz 386 RAM	27487790694400MB	\$1149.95
100MHz 386 RAM	54975581388800MB	\$1169.95	100MHz 386 RAM	54975581388800MB	\$1169.95
100MHz 386 RAM	109951162777600MB	\$1189.95	100MHz 386 RAM	109951162777600MB	\$1189.95
100MHz 386 RAM	219902325555200MB	\$1209.95	100MHz 386 RAM	219902325555200MB	\$1209.95
100MHz 386 RAM	439804651110400MB	\$1229.95	100MHz 386 RAM	439804651110400MB	\$1229.95
100MHz 386 RAM	879609302220800MB	\$1249.95	100MHz 386 RAM	879609302220800MB	\$1249.95
100MHz 386 RAM	1759218604441600MB	\$1269.95	100MHz 386 RAM	1759218604441600MB	\$1269.95
100MHz 386 RAM	3518437208883200MB	\$1289.95	100MHz 386 RAM	3518437208883200MB	\$1289.95
100MHz 386 RAM	7036874417766400MB	\$1309.95	100MHz 386 RAM	7036874417766400MB	\$1309.95
100MHz 386 RAM	14073748835532800MB	\$1329.95	100MHz 386 RAM	14073748835532800MB	\$1329.95
100MHz 386 RAM	28147497671065600MB	\$1349.95	100MHz 386 RAM	28147497671065600MB	\$1349.95
100MHz 386 RAM	56294995342131200MB	\$1369.95	100MHz 386 RAM	56294995342131200MB	\$1369.95
100MHz 386 RAM	112589990684262400MB	\$1389.95	100MHz 386 RAM	112589990684262400MB	\$1389.95
100MHz 386 RAM	225179981368524800MB	\$1409.95	100MHz 386 RAM	225179981368524800MB	\$1409.95
100MHz 386 RAM	450359962737049600MB	\$1429.95	100MHz 386 RAM	450359962737049600MB	\$1429.95
100MHz 386 RAM	900719925474099200MB	\$1449.95	100MHz 386 RAM	900719925474099200MB	\$1449.95
100MHz 386 RAM	1801439850948198400MB	\$1469.95	100MHz 386 RAM	1801439850948198400MB	\$1469.95
100MHz 386 RAM	3602879701896396800MB	\$1489.95	100MHz 386 RAM	3602879701896396800MB	\$1489.95
100MHz 386 RAM	7205759403792793600MB	\$1509.95	100MHz 386 RAM	7205759403792793600MB	\$1509.95
100MHz 386 RAM	14411518807585587200MB	\$1529.95	100MHz 386 RAM	14411518807585587200MB	\$1529.95
100MHz 386 RAM	28823037615171174400MB	\$1549.95	100MHz 386 RAM	28823037615171174400MB	\$1549.95
100MHz 386 RAM	57646075230342348800MB	\$1569.95	100MHz 386 RAM	57646075230342348800MB	\$1569.95
100MHz 386 RAM	115292150460684697600MB	\$1589.95	100MHz 386 RAM	115292150460684697600MB	\$1589.95
100MHz 386 RAM	230584300921369395200MB	\$1609.95	100MHz 386 RAM	230584300921369395200MB	\$1609.95
100MHz 386 RAM	461168601842738790400MB	\$1629.95	100MHz 386 RAM	461168601842738790400MB	\$1629.95
100MHz 386 RAM	922337203685477580800MB	\$1649.95	100MHz 386 RAM	922337203685477580800MB	\$1649.95
100MHz 386 RAM	1844674407370955161600MB	\$1669.95	100MHz 386 RAM	1844674407370955161600MB	\$1669.95
100MHz 386 RAM	3689348814741910323200MB	\$1689.95	100MHz 386 RAM	3689348814741910323200MB	\$1689.95
100MHz 386 RAM	7378697629483820646400MB	\$1709.95	100MHz 386 RAM	7378697629483820646400MB	\$1709.95
100MHz 386 RAM	14757395258967641292800MB	\$1729.95	100MHz 386 RAM	14757395258967641292800MB	\$1729.95
100MHz 386 RAM	29514790517935282585600MB	\$1749.95	100MHz 386 RAM	29514790517935282585600MB	\$1749.95
100MHz 386 RAM	59029581035870565171200MB	\$1769.95	100MHz 386 RAM	59029581035870565171200MB	\$1769.95
100MHz 386 RAM	118059162071741130342400MB	\$1789.95	100MHz 386 RAM	118059162071741130342400MB	\$1789.95
100MHz 386 RAM	236118324143482260684800MB	\$1809.95	100MHz 386 RAM	236118324143482260684800MB	\$1809.95
100MHz 386 RAM	472236648286964521369600MB	\$1829.95	100MHz 386 RAM	472236648286964521369600MB	\$1829.95
100MHz 386 RAM	944473296573929042739200MB	\$1849.95	100MHz 386 RAM	944473296573929042739200MB	\$1849.95
100MHz 386 RAM	1888946593147858085478400MB	\$1869.95	100MHz 386 RAM	1888946593147858085478400MB	\$1869.95
100MHz 386 RAM	3777893186295716170956800MB	\$1889.95	100MHz 386 RAM	3777893186295716170956800MB	\$1889.95
100MHz 386 RAM	7555786372591432341913600MB	\$1909.95	100MHz 386 RAM	7555786372591432341913600MB	\$1909.95
100MHz 386 RAM	15111572745182864683827200MB	\$1929.95	100MHz 386 RAM	15111572745182864683827200MB	\$1929.95
100MHz 386 RAM	30223145490365729367654400MB	\$1949.95	100MHz 386 RAM	30223145490365729367654400MB	\$1949.95
100MHz 386 RAM	60446290980731458735308800MB	\$1969.95	100MHz 386 RAM	60446290980731458735308800MB	\$1969.95
100MHz 386 RAM	120892581961462917470617600MB	\$1989.95	100MHz 386 RAM	120892581961462917470617600MB	\$1989.95
100MHz 386 RAM	241785163922925834941235200MB	\$2009.95	100MHz 386 RAM	241785163922925834941235200MB	\$2009.95
100MHz 386 RAM	483570327845851669882470400MB	\$2029.95	100MHz 386 RAM	483570327845851669882470400MB	\$2029.95
100MHz 386 RAM	967140655691703339764940800MB	\$2049.95	100MHz 386 RAM	967140655691703339764940800MB	\$2049.95
100MHz 386 RAM	1934281311383406679529881600MB	\$2069.95	100MHz 386 RAM	1934281311383406679529881600MB	\$2069.95
100MHz 386 RAM	3868562622766813359059763200MB	\$2089.95	100MHz 386 RAM	3868562622766813359059763200MB	\$2089.95
100MHz 386 RAM	7737125245533626718119526400MB	\$2109.95	100MHz 386 RAM	7737125245533626718119526400MB	\$2109.95
100MHz 386 RAM	15474250491067253436239052800MB	\$2129.95	100MHz 386 RAM	15474250491067253436239052800MB	\$2129.95
100MHz 386 RAM	30948500982134506872478105600MB	\$2149.95	100MHz 386 RAM	30948500982134506872478105600MB	\$2149.95
100MHz 386 RAM	61897001964269013744956211200MB	\$2169.95	100MHz 386 RAM	61897001964269013744956211200MB	\$2169.95
100MHz 386 RAM	123794003928538027489912422400MB	\$2189.95	100MHz 386 RAM	123794003928538027489912422400MB	\$2189.95
100MHz 386 RAM	247588007857076054979824844800MB	\$2209.95	100MHz 386 RAM	247588007857076054979824844800MB	\$2209.95
100MHz 386 RAM	495176015714152109959649689600MB	\$2229.95	100MHz 386 RAM	495176015714152109959649689600MB	\$2229.95
100MHz 386 RAM	990352031428304219919299379200MB	\$2249.95	100MHz 386 RAM	990352031428304219919299379200MB	\$2249.95
100MHz 386 RAM	1980704062856608439838598758400MB	\$2269.95	100MHz 386 RAM	1980704062856608439838598758400MB	\$2269.95
100MHz 386 RAM	3961408125713216879677197516800MB	\$2289.95	100MHz 386 RAM	3961408125713216879677197516800MB	\$2289.95
100MHz 386 RAM	7922816251426433759354395033600MB	\$2309.95	100MHz 386 RAM	7922816251426433759354395033600MB	\$2309.95
100MHz 386 RAM	15845632502852867518708790067200MB	\$2329.95	100MHz 386 RAM	15845632502852867518708790067200MB	\$2329.95
100MHz 386 RAM	31691265005705735037417580134400MB	\$2349.95	100MHz 386 RAM	31691265005705735037417580134400MB	\$2349.95
100MHz 386 RAM	63382530011411470074835160268800MB	\$2369.95	100MHz 386 RAM	63382530011411470074835160268800MB	\$2369.95
100MHz 386 RAM	126765060022822940149670320537600MB	\$2389.95	100MHz 386 RAM	126765060022822940149670320537600MB	\$2389.95
100MHz 386 RAM	253530120045645880299340641075200MB	\$2409.95	100MHz 386 RAM	253530120045645880299340641075200MB	\$2409.95
100MHz 386 RAM	507060240091291760598681282150400MB	\$2429.95	100MHz 386 RAM	507060240091291760598681282150400MB	\$2429.95
100MHz 386 RAM	1014120480182583521197362564300800MB	\$2449.95	100MHz 386 RAM	1014120480182583521197362564300800MB	\$2449.95
100MHz 386 RAM	2028240960365167042394725128601600MB	\$2469.95	100MHz 386 RAM	2028240960365167042394725128601600MB	\$2469.95

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Letters

Continued from page 8

for Web, you have to estimate a healthy dose of realism. I just wanted to offer an additional reason to the list of things to do to protect yourself from paying for flawed software: your results should be worth more than reality gives flawed software credit. For the person and most people are from a company called Zone Labs (www.zone-labs.com). In product, Zone Labs offers great firewall protection and more of use.

I learned about it from a friend and met it, security and Canada Research Corporation (http://www.crc.ca). I have had a few problems with my system (and) I had to be helped. Zone Labs software are that. But I have been trying to learn the Net with my own permission (and I have left myself in a hole). I've now moved it on from doing that. With a product like this, there is no reason that the Net should be becoming a threat. But I'm sure I don't have any affiliation with either company but I believe in giving credit where credit is due.

Charles Moore

A first look at Palms' silver handheld

Continued from page 10

Add-ons add up

For both new devices, there is a host of hardware and software add-ons, most developed by third parties, but some by Palm. On each device, the sellable Palm Personal Keyboard (PAKH) is a useful accessory to the Graffiti-style input for entering large amounts of text.

In total, the company says more than 300 hardware add-ons have been announced for Palm devices, including a 32-bit 386/486 Global Positioning System (GPS) and more than 100 software add-ons. In February, Gold announced the PalmPilot (Pilot 750), a device that runs the Palm OS as a digital camera. It will be released by summer, according to Kuhl.

Meanwhile, says Palm, it also formed strategic alliances with computer, including Novell, Qualcomm, and Sony, and it expects new digital appliance products incorporating Palm technology to be introduced later in 2000.

—Jeff Labrec, New Lambert, and Megan Johnston

Revolving the family network

Continued from page 10

Microtelnet and hand have developed USB versions of their Thermostat products. This solution not only allows use of the software off-lying cable to build a home network, but also off other phone line solutions, but it means you don't even have to sit the table on your computer. With the USB kit, you just plug the USB ports onto your PC, and the other end of the line goes into the wall phone jack. In-house, they're extremely. Not only that but you have no phone and a PC you're still as hooked. On older computer systems, Products like these made us all happy.

If you are getting a new computer and have been thinking that keeping the old one makes a lot of sense (except a phone line network), it allows you to share your Internet account, printers, and other peripherals. The only caveat is that you're not the obvious fact that two computers require more or much maintenance in fact. Other than that small drawback, it is a painless. You might just have to add the old Network Manager to your Internet card. (J)

Intel Pentium III

Model	Price
Intel Pentium III 500MHz	\$549
Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 500MHz	\$549
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Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 500MHz	\$549
Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

Intel Pentium III

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Intel Pentium III 500MHz	\$549
Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
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Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
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Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

Intel Pentium III

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Intel Pentium III 500MHz	\$549
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Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
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Intel Pentium III 700MHz	\$749
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Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 850MHz	\$899
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Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
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Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
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Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

Microtelnet

Model	Price
Intel Pentium III 500MHz	\$549
Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
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Intel Pentium III 850MHz	\$899
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Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Model	Price
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Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

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Model	Price
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Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
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Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
Intel Pentium III 800MHz	\$849
Intel Pentium III 850MHz	\$899
Intel Pentium III 900MHz	\$949
Intel Pentium III 950MHz	\$999
Intel Pentium III 1000MHz	\$1049

Microtelnet

Model	Price
Intel Pentium III 500MHz	\$549
Intel Pentium III 550MHz	\$599
Intel Pentium III 600MHz	\$649
Intel Pentium III 650MHz	\$699
Intel Pentium III 700MHz	\$749
Intel Pentium III 750MHz	\$799
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Intel Pentium III 900MHz	\$949
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E. & O.E.

Digital devices get no reward

Continued from page 38
(like a rifle shot) while not picking up the old code language of your target.
Shopping tips:
• None

Hybrids

First page depends on state, model and combination of features.
As you might expect, the digital nature of these new outdoor devices allows for a wide range of

features (all varying agreed) to be combined within a single unit. There are regulations with basic components (like measuring steps), for example, and weather stations with built-in barometers (for weather and local clouds). The DCH Datascope, for example, is a pocket-sized monitor with a built-in compass, magnifier and chronometer (CHRONO.com/chronoscope.com) even makes a popular cell phone with a built-in GPS receiver, but at around \$1,000 it costs considerably more than purchasing two separate devices.

The most practical outdoor-level hybrids show up in the wide variety of wrist computers on the market (I've listed all of one that has tabs for the 33 features around the world programmed in).

Traditional outdoor equipment maker Boreas (Boreas.com) sells a "watch" that includes a barometer, altimeter, digital compass and built-in GPS—combining these devices that would otherwise be purchased separately. As with the DCH/GPS watch, however, the trade-off is in instrument economy.

Recent outdoor units include such things as altitude and temperature compensation to carry to total the end of position a precise local forecast, sunrise or sunset might require. The Source Vector Altimeter Watch for the end of its year for less accurate readings but can be used for a July (2003) Professionals was expected to pay at least \$300 for a digital altimeter alone.

When Ridge says, "Hybrids protect the groundwork for someone who may not be using such devices every day, for one smaller price you get down, but so the instruments on one that stores a wide enough variety of hybrids on the market that you will likely find a combination of features that make your needs. If I was going into the woods, I'd want to take a GPS unit and, if hunting, a laser rangefinder. But I'd still be picking my trusty old analog compass."

Shopping tips:
• None

Networking

Internet is their digital device continues to grow among consumers as their price continues to drop. They are now largely regarded as a personal purchase. As more people use them, Ridge concludes, "they tend to find more uses for them. But it's important to remember that these things don't make you accessible out in the wild. Believe it or not, neither can you drive, grade can be blocked. That's why it's important to not have all the basic outdoor skills—and a traditional compass and map are a backup." □

ISB gives LAN high-speed Internet

Continued from page 41

used a simple track of going the home Webpage the same name as the Webpage at work, as we wouldn't have to keep changing this setting over and over between the two locations.

The ISB 2 LANs may reach only a few of the highly potential, domestic sites. Luke Ippolito, president of ISB Canada, the company distributing the products in Canada, has a number of sites in Canada based on ISB. The ISB product had previously been used at Internet service providers and telecommunications companies. With the push to turn it into a retail product, the door continues to swing wider, he said.

Summary

We've seen many products to remove such needs, and the real test of what we truly think about any of them is our own response to the question "would I buy this product for myself?" In the case of the ISB 2 LAN, the answer is "yes." With a suggested retail price of \$200, it seems expensive for a home, but for me it's a home office, and I'd like to attribute for a small business.

If you don't have multiple computers, can use and already you'll stay home to consider the expense of building a LAN. This includes the cost of network cards (\$20 to \$40 each), a hub (or a switch) for a few ports, and a few of the network cabling. However, if you have an existing LAN (or are planning to install one), and are considering getting high-speed Internet access through a cable or DSL connection, ISB 2 LAN is a quick solution. The three machines we used to test the product all ran Windows, but ISB 2 LAN will work with Mac, Linux and other OSes that support TCP/IP. □

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Desktop video ^{processing} editing software

Though the brave and foolish have been trying to edit video on their PCs for years, the time has finally come for more cautious consumers to add this capability to their PC toolsets.

By **Shantanu Halder**

Personal computers and video production are finally starting to make a few friends. In processors and hard drives are now fast enough to handle the enormous data streams, hard drives are finally big enough to handle the massive files, and larger monitors with higher resolution video cards finally provide the screen real estate and video processing power you need.

Technology advances like FireWire, iLink or DV (1080 pixels) drive units that refer to the more technology, USB video capture devices, and computer graphics cards that also support video are lowering costs, improving quality and simplifying the process. The first digital video (DV) and digital stream cameras and DV (DV) that can be used have appeared.

But enough about hardware. The core of video editing is now that finally does justice to the more wonderful things these applications allow you to do with moving and still images, words and sound. We use the term word processor to describe text editing software, and the same "video editor" may be more appropriate than "video editor" for these programs.

Although some of these applications have been around for a while, the field is far from static or stable, and you may interpret that both ways. The first two are changing rapidly, and the combination of new capabilities and tools that are processing hard drive, unlike video card interface means that you'll be converting a stream source a little more often than you'll like. But I find that new or new features as much of these programs perform as so comprehensible and still through advances in technology make quality a better than ever, you can still see into your share of unexpected risks and problems.

A foundation of the process

Step one is to take the footage you want to work with from tape and get it onto your hard drive. Although most of these applications will take capture, it's really difficult. Unless you have a digital camcorder, you need to convert the analog signal on the tape into digital data that your computer can manipulate.

In some, as well, that some of these programs are pretty fast by which the cost per unit. For example, Blackmagic Studio DV only works with a DV input (FireWire or iLink) card. The list of cards supported by Adobe

Premiere is based. Most video cards with capture capabilities include their own software, a feature you may find useful when another software package doesn't recognize the capture card.

The next step is to assemble the segments you've captured into a movie. Visually, the programs control on this step-up from two distinct camps. Following the lead of iMovie, VideoWave, a control must like a screen simulation of a high-tech video application that a regular Windows application. Premiere and iMovie Media Studio follow a more traditional look, but with many windows, menus, and toolbars.

Continued on page 30



DeskJet 1220Cxi a capable tabloid inkjet

Speed, color technology, paper capacity put printer near head of the class

By **David Tanaka**

Today most inkjet printers produce excellent black text and very good to excellent color. The trade-offs made on the margins of cost these days have led to do with great quality (although it is still an expensive variable) and even to do with other factors like speed, versatility and convenience. If your needs are modest, you'll probably be satisfied with the great quality of any model that fits your budget. However, do more you pay the more you gain in overall performance and features.



HP DeskJet 1220Cxi

From Hewlett-Packard (Seattle)

Microsoft's CIP

Price: \$100 (street)

Print speed: 10 ppm

Print quality: 1200 dpi

Which brings us to the subject of Hewlett-Packard's latest inkjet: When HP's Catalyst introduced the 1220Cxi in January the \$100 model of most price was around \$50 cheaper than competing models, like Epson's 1280 or 1200. Those models if you're willing to pay the price to be able to make big prints, the HP DeskJet 1220Cxi should be on your short list.

Out of the box

Setting up the DeskJet 1220 is a straightforward process. It takes the printer, which the paper output tray, power cable and power adapter and starts the two ink cartridges. Once you go through a Windows printer installation procedure, it's ready to go.

The printer has a parallel and USB port and comes with software for Windows 95, 98, and NT 4.0 and Macintosh operating systems. It can also be used on a network, but that requires an optional Ethernet interface card. The lack of a serial port means that only those with a USB port or a network will be able to print to the DeskJet.

The printer comes with high-capacity ink cartridges, but a standard-capacity cartridge. While HP's Professional series

Continued on page 30

Money makes sense

After five years, Money and market leader Quicken look more alike than ever

By **Paul Lambard**

Recently, Microsoft released the latest version of its personal financial program, Money 2000. Money 2000 is a direct descendant of Quicken, Money has long been trying to catch up with Quicken but has been losing the race. With the new, rich, and complete Money 2000, there may be a new challenger in the personal financial software landscape.

Money 2000

Money 2000 Deluxe

From Microsoft (Redmond, WA)

Price: \$50 (street)

Print speed: 10 ppm

Print quality: 1200 dpi

Which brings us to the subject of Microsoft's latest inkjet: When HP's Catalyst introduced the 1220Cxi in January the \$100 model of most price was around \$50 cheaper than competing models, like Epson's 1280 or 1200. Those models if you're willing to pay the price to be able to make big prints, the HP DeskJet 1220Cxi should be on your short list.

Continued on page 30



Microsoft Money 2000 is a Web-enabled financial program with features and functions for everyone. The only downside after five years is the HTML, which has been slow to improve. The different functions along the lines of software management. "The year we're looking at the interface to focus on a task-based concept, which is really what our customers were telling us they 'must' need," says Denise Winston, product manager with Microsoft Canada. This means that the home page, as the opening screen, is now called, but also to personally customized tasks.

For example, Set Up Accounts, Get Online Statements and Fuel & Transcribe are in the form of HTML links to help users navigate the performing these functions. The benefits of this approach include

Continued on page 30



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Daskal's 2000 and 2000 models use individual cartridges for each of the four units; the Daskal 2200 uses the typical two-cartridge arrangement (one cartridge for black and one for color, cyan, magenta and yellow).

The paper tray will accept everything from 42 each note—such as up to 10x20-inch photos. It also accepts up to 11x14-inch prints on roll paper. The ease of use features HP has incorporated on this model are a small detail, but

how often things like perfect jobs, commodities, and

Discussion

HP's published specifications state that the 8200 prints at a maximum speed of 18 pages per minute (ppm) in black and 15 ppm in color. Top will probably never achieve these printing speeds, but as most word processors the printer is fast enough that users will not be noticing any delay.

printing customer items like documents, even when they contain pictures of subjects in small photos.

However, if present-day sampling methods are the kind of generating spread used, full-page plant graphics (Figure 2). The kind of present-day large photos are very subject, when measured per page, and pages per minute. When we present a few test photographs on 11x17 stock photo paper the printer took several minutes to create the photos, 147 photos 0.2 pages per minute. On 11x17 photos printed on just paper on the same

ated, and not given energy) within a minute or so of that return. The BP always was higher than our worldwide mean blood pressure (140 also a solid independent risk factor in women from Luzzatto).

In formal culture, fidelity and isolation, we were very aligned with the last point. Printing a photographic image on individual photo paper tests the printer's ability to render detail that the other uses a large area, and for the most part, on a casual inspection, the HP prints more accurate, as good as a photographic print, from what we used a mapping plan, we could not detect print artifacts like 'banding effects' (other individual results of suit are omitted). We encountered one anomaly that was not an issue to reproduce, and which did not occur again, where the printer misinterpreted a close value interval, creating an oddly patterned line consistent across the print.

We also received a letter applicable to any subject: "After the print backs further processing, a large amount of film having the prints also be several days, we had the print bottom in our image-aligning software program and need all of its something else. When we came back we were disappointed to discover that the first two-thirds of the print were severely off color. The magnetic print head had apparently dried during the period of inactivity and it took a number of prints before a satisfactory result and started making sense."

[illegible]

In the real world, there has been no ongoing debate over the real benefits of sex restriction. For example, *Synon*, which produces profits north of \$400 per acre, says *Synon* maintains that there's no substitute for *Synon* when it comes to producing the best looking corn.

HP has long argued that image quality can be achieved in other ways, and the HP 1200 uses PhotoREt III, the company's latest version of its inkjet technology. According to HP, PhotoREt III involves an ink layering process that allows each dot on the page to be built from up to 29 individual droplets of ink. The company says this allows the printer to create up to 17 different levels of each of the primary

A second technology used in the HP G25 is called ColorSmart III, which is designed to improve the reproduction of colors that can make a break a photographic print—like trees, for example, look differently during a printout from the "easy life in trees" comp. HP also means that Double G25 includes an alternative photo printing mode of 1440x1440 dpi on photo paper.

1000-0000-2006-0000-0000

Only characteristics of this and other labeled solvent systems in these pressure levels are compared in a later solvent pointer. If your work space is not the small size, be prepared to have the HP 1100A take over a good portion of it.

On the whole, we've been very impressed with the print quality and speed of the HP inkjet printers we've installed recently, and the HP L2500 continues that tradition. With good print statistics, plus the approval of those used to give you connectivity options both in home and in a small office environment, a sleep-cycle averaged 3,000 pages per month for the members of HP's network to create a single number for a busy home office or small business.

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Figure 1 *Diagram illustrating the study design. The study was conducted in two phases. In the first phase, 100 subjects were recruited from the community and screened for eligibility. In the second phase, 50 subjects were recruited from the community and screened for eligibility.*

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Experiments with this software are ongoing.

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DATE	DESCRIPTION	AMOUNT	BALANCE
1997-01-01	Opening Balance		100.00
1997-01-15	Deposit	50.00	150.00
1997-02-01	Withdrawal	25.00	125.00
1997-02-15	Deposit	75.00	200.00
1997-03-01	Withdrawal	100.00	100.00
1997-03-15	Deposit	50.00	150.00
1997-04-01	Withdrawal	25.00	125.00
1997-04-15	Deposit	75.00	200.00
1997-05-01	Withdrawal	100.00	100.00
1997-05-15	Deposit	50.00	150.00
1997-06-01	Withdrawal	25.00	125.00
1997-06-15	Deposit	75.00	200.00
1997-07-01	Withdrawal	100.00	100.00
1997-07-15	Deposit	50.00	150.00
1997-08-01	Withdrawal	25.00	125.00
1997-08-15	Deposit	75.00	200.00
1997-09-01	Withdrawal	100.00	100.00
1997-09-15	Deposit	50.00	150.00
1997-10-01	Withdrawal	25.00	125.00
1997-10-15	Deposit	75.00	200.00
1997-11-01	Withdrawal	100.00	100.00
1997-11-15	Deposit	50.00	150.00
1997-12-01	Withdrawal	25.00	125.00
1997-12-15	Deposit	75.00	200.00
1998-01-01	Opening Balance		200.00

Variable	Mean	SD	Min	Max
Age	34.5	10.2	21	55
Gender	0.45	0.50	0	1
Marital Status	0.35	0.48	0	1
Education	12.5	1.5	9	16
Income	3500	1500	1000	8000
Health	0.65	0.45	0	1
Smoking	0.25	0.43	0	1
Drinking	0.15	0.36	0	1

[illegible]

Category	Value	Unit
Age	10.0	Years
Weight	150.0	Pounds
Height	5.5	Feet
Gender	Male	Gender
Marital Status	Married	Marital Status
Education	High School	Education
Occupation	Software Engineer	Occupation
Income	75000	Dollars
Health Status	Good	Health Status
Smoking Status	Non-Smoker	Smoking Status
Exercise Frequency	3 times a week	Exercise Frequency
Diet Type	Vegetarian	Diet Type
Stress Level	Low	Stress Level
Sleep Duration	7 hours	Sleep Duration
Family Size	2	Family Size
Travel Frequency	Once a month	Travel Frequency
Religious Belief	Christianity	Religious Belief
Political Affiliation	Democrat	Political Affiliation
Artistic Ability	Low	Artistic Ability
Mathematical Ability	High	Mathematical Ability
Verbal Ability	Medium	Verbal Ability
Logical Reasoning	High	Logical Reasoning
Memory Retention	Good	Memory Retention
Problem Solving	Excellent	Problem Solving
Emotional Stability	High	Emotional Stability
Resilience	Medium	Resilience
Adaptability	High	Adaptability
Openness to Experience	Low	Openness to Experience
Conscientiousness	High	Conscientiousness
Extraversion	Medium	Extraversion
Agreeableness	High	Agreeableness
Neuroticism	Low	Neuroticism
Self-Esteem	High	Self-Esteem
Life Satisfaction	High	Life Satisfaction
Overall Health Score	85	Percentage

Part	Material	Quantity	Unit Price	Total Price
1	1000	1000	1.00	1000.00
2	2000	2000	2.00	4000.00
3	3000	3000	3.00	9000.00
4	4000	4000	4.00	16000.00
5	5000	5000	5.00	25000.00
6	6000	6000	6.00	36000.00
7	7000	7000	7.00	49000.00
8	8000	8000	8.00	64000.00
9	9000	9000	9.00	81000.00
10	10000	10000	10.00	100000.00

[illegible][illegible]

Model	Year	Price	MPG (City)	MPG (Highway)	MPG (Combined)
2000 Ford Focus	2000	\$12,500	24	34	28
2001 Ford Focus	2001	\$13,500	24	34	28
2002 Ford Focus	2002	\$14,500	24	34	28
2003 Ford Focus	2003	\$15,500	24	34	28
2004 Ford Focus	2004	\$16,500	24	34	28
2005 Ford Focus	2005	\$17,500	24	34	28
2006 Ford Focus	2006	\$18,500	24	34	28
2007 Ford Focus	2007	\$19,500	24	34	28
2008 Ford Focus	2008	\$20,500	24	34	28
2009 Ford Focus	2009	\$21,500	24	34	28
2010 Ford Focus	2010	\$22,500	24	34	28
2011 Ford Focus	2011	\$23,500	24	34	28
2012 Ford Focus	2012	\$24,500	24	34	28
2013 Ford Focus	2013	\$25,500	24	34	28
2014 Ford Focus	2014	\$26,500	24	34	28
2015 Ford Focus	2015	\$27,500	24	34	28
2016 Ford Focus	2016	\$28,500	24	34	28
2017 Ford Focus	2017	\$29,500	24	34	28
2018 Ford Focus	2018	\$30,500	24	34	28
2019 Ford Focus	2019	\$31,500	24	34	28
2020 Ford Focus	2020	\$32,500	24	34	28
2021 Ford Focus	2021	\$33,500	24	34	28
2022 Ford Focus	2022	\$34,500	24	34	28
2023 Ford Focus	2023	\$35,500	24	34	28
2024 Ford Focus	2024	\$36,500	24	34	28
2025 Ford Focus	2025	\$37,500	24	34	28
2026 Ford Focus	2026	\$38,500	24	34	28
2027 Ford Focus	2027	\$39,500	24	34	28
2028 Ford Focus	2028	\$40,500	24	34	28
2029 Ford Focus	2029	\$41,500	24	34	28
2030 Ford Focus	2030	\$42,500	24	34	28

Warning
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2.000	kg	2.00	2.00	2.00
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Year	Population	Population Density
1950	1,000,000	100
1960	1,500,000	150
1970	2,000,000	200
1980	2,500,000	250
1990	3,000,000	300
2000	3,500,000	350
2010	4,000,000	400
2020	4,500,000	450

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- 4. **Southwest US PG**
 100% renewable
 100% wind
 100% solar
- 5. **Water: Best PG**
 100% wind
 100% solar
- 6. **Water: Best NG**
 100% wind
 100% solar
 100% natural gas

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- **Computerized Accounting for Dummies**
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- Download: [10/11/2009/2009-10-11.pdf](#)

- **Unit 10: 10 Days of Bookkeeping**
- 10/11 Nov 2009 for all employees 10 Nov
- 10 Nov 2009 (10 Nov)
- 10 Nov 2009 (10 Nov)

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1  # Import the necessary modules
2  from sklearn.preprocessing import StandardScaler
3  from sklearn.model_selection import train_test_split
4  from sklearn.metrics import accuracy_score
5  from sklearn.svm import SVC
6  from sklearn.naive_bayes import GaussianNB
7  from sklearn.ensemble import RandomForestClassifier
8  from sklearn.linear_model import LogisticRegression
9  from sklearn.neighbors import KNeighborsClassifier
10 from sklearn.tree import DecisionTreeClassifier
11
12 # Load the dataset
13 data = load_data()
14
15 # Split the data into training and testing sets
16 X_train, X_test, y_train, y_test = train_test_split(
17     data[['Pulse', 'Blood Pressure', 'Cholesterol', 'Sugars', 'ACU', 'BMI', 'Age']],
18     data['Diabetes'],
19     test_size=0.2,
20     random_state=42)
21
22 # Standardize the features
23 scaler = StandardScaler()
24 X_train = scaler.fit_transform(X_train)
25 X_test = scaler.transform(X_test)
26
27 # Train the models
28 svm = SVC()
29 nb = GaussianNB()
30 rf = RandomForestClassifier()
31 lr = LogisticRegression()
32 knn = KNeighborsClassifier()
33 dt = DecisionTreeClassifier()
34
35 # Evaluate the models
36 svm.fit(X_train, y_train)
37 nb.fit(X_train, y_train)
38 rf.fit(X_train, y_train)
39 lr.fit(X_train, y_train)
40 knn.fit(X_train, y_train)
41 dt.fit(X_train, y_train)
42
43 # Predict on the test set
44 svm_pred = svm.predict(X_test)
45 nb_pred = nb.predict(X_test)
46 rf_pred = rf.predict(X_test)
47 lr_pred = lr.predict(X_test)
48 knn_pred = knn.predict(X_test)
49 dt_pred = dt.predict(X_test)
50
51 # Calculate the accuracy of each model
52 svm_acc = accuracy_score(y_test, svm_pred)
53 nb_acc = accuracy_score(y_test, nb_pred)
54 rf_acc = accuracy_score(y_test, rf_pred)
55 lr_acc = accuracy_score(y_test, lr_pred)
56 knn_acc = accuracy_score(y_test, knn_pred)
57 dt_acc = accuracy_score(y_test, dt_pred)
58
59 # Print the accuracy of each model
60 print("SVM Accuracy: {}".format(svm_acc))
61 print("Naive Bayes Accuracy: {}".format(nb_acc))
62 print("Random Forest Accuracy: {}".format(rf_acc))
63 print("Logistic Regression Accuracy: {}".format(lr_acc))
64 print("K-Nearest Neighbors Accuracy: {}".format(knn_acc))
65 print("Decision Tree Accuracy: {}".format(dt_acc))

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Streaming video: presenting software Continued from page 40

panels and pictures open at the same time.

There are also two different approaches to the editing area. Premiere and iMovie Studio use a timeline, in which multiple frames from each captured segment or clip are displayed according to length. VideoWave presented the timeline, in which each scene is represented by one image. iMovie DV can display either timeline or storyboard, at your preference. If you're in a hurry to put the pieces together, the storyline approach is definitely easier. If you're looking at the raw files, you'll probably find the timeline offers the greater control.

When you're done, you will have created an audio stream (a WAV), a set of multitracks representing video segments and where—in your multitracks and make the correct. This is often referred to as rendering.

Some tips

Although these programs may be oriented for video production, using the software does not make you a professional—any more than a pen does you have to write novels. Several of these programs include templates and other guides to help you understand the process. VideoWave's templates give you a guide to the sequence you might use to tell a specific kind of story, like a wedding or a graduation.

Video guides: leave down space for feedback, thereby, thereby and a few words for good measure. A second or two video footage was taken from 20 to 30 MB of information. Compression applied as the footage is being digitized means that you can get 100-MB

quality at rates under 10 MB per second, as you can meet 30 minutes of video clips in about 300 MB. But remember that you'll need about as another 100 MB to save the final rendered movie.

These applications range in price from \$40 to \$200. While price is a factor—you definitely get more bells and whistles for \$200—all of these products can produce high-quality video.

Adobe, Ulead and iMovie have their roots in PC graphics applications. Premiere's background is in professional video production. These aren't the only products out there, and the field is about to get a little more crowded. The next consumer release of iMovie Pro—by the name iMovie Pro—will introduce a basic video editing application.

MSI VideoWave II

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linear rates of access into a movie. VideoWave was also one of the first applications to use Intel's iMovie Studio to create real-time preview. Other programs were intuitive and cheap, but VideoWave was fast and fun.

The storyline approach does make most aspects—the editing process in several contexts—less intuitive than they are with a timeline-style interface. VideoWave compensates with an excellent online manual that includes both explanation and step-by-step instructions. The learning could be better though.

Surprisingly, not much has changed in this latest release. VideoWave 1.2. Under the hood, it's faster, more stable, more powerful and has expanded its features to allow more story editing. This release supports all the latest stuff including DV and MPEG2.

VideoWave is designed for professionals in a hurry. With the Windows and its associated software, it's not a professional interface you need as in one place. The various controls include a variety of preset effects. For example, the text controls include effects that change the look and make the text more on the screen. This makes a complex task, like creating a credit roll for the end of the movie, as simple as typing in the text and clicking on two buttons.

The Catalog menu enables you to take storyboard footage from the start and end of captured scenes. With VideoWave, the storyboard can be "video accurate." This means you can move forward and backward one frame (or image) at a time. Although there are only 30 frames in a second, VideoWave displays time in tenths of a second. It can move the scene after rendering, to save time that you

There are buttons to split clips, to test, to split a clip and to insert the video from a clip to test in story-time sequence. VideoWave is the one of VideoWave's shortcomings. It now supports up to 16 tracks per segment, giving you the opportunity to add narration, music and a couple of sound effects in a scene. Consequently, and delightfully, VideoWave has the ability to combine two images based on color, a feature called chroma key or blue screen. (An example of this effect is when the TV weather forecast stands in front of a blue wall as the studio ChromaKey is used to replace the blue with the weather station map.) There are also many other features, both to correct problems, like a color shift caused by fluorescent lighting, and to add artistic effects, such as a zoom.

VideoWave offers a choice of 50 transitions in one between scenes, including necessary effects, like wipe, and 100 motion effects, like pan. When you place a transition, it can be played without having to wait for a preview to be created. However, depending on the speed of your processor, you may not be able to see the full effect on real time. A preview window allows you to make a full quality for speed.

VideoWave's automatic means you can always get exactly what you want. It's not just the feature but it's also there and small enough to be used in a one-to-one way. All of the software has the great of most systems per set to play fast.

You may be able to order some of these amazing capabilities with a little help. For example, with the storyline approach to story editing, you may be able to get a smooth editing.

Continued on page 42

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Editing video processing software

Continued from page 10

slowing credits over a series of still frames or freeze-out clips. If you render that scene first, and then put the credits over the now combined scene, the problem is solved. That kind of creativity will come as easily with any of these programs, especially if you're trying to render what you've seen on TV.

VideoShare supports AVI, QuickTime, MPEG and DV video formats. If you have an IEEE 1394 DV interface card, you can use VideoShare's DV features to control your camcorder while you copy original footage to your computer.

Adobe Premiere 5.5

From Adobe
<http://www.adobe.com>
 Minimum system requirements: Pentium processor, 16 MB RAM, minimum street price \$250.



Adobe Premiere is as close as you can get to a professional product on your desktop. In that respect, it's stable enough that you can complete many projects without experiencing a crash. The new auto-save capability means you'll only have to lose a few minutes work if a crash does happen. You can save under the hot J1 shortcut, or use the Save A Copy command to set a checkpoint to return to when your creative instincts go off on an independent tangent.

In professional terms, Premiere is an off-liner, not an on-line editor. Off-line means the movie you're creating is not the final cut. The final movie is created as an AVI movie, where the original tapes are played back in the off-line IDE. Non-linear means you don't have to assemble scenes in order the way you must when you're copying from the original tapes to the master. If you're not a professional, you'll finish the project as Premiere by rendering the movie. If you are, you'll take the Premiere IDE, to an on-line suite to create your final broadcast-quality tape.

Premiere is not easy to use. The learning curve is steep. There is a bewildering and obnoxious set of arcane commands, or screen tools, floating free against keyboard shortcuts that must be learned before you can appreciate the full power of the program. At the same time, you must learn the nonintuitive placement of files and video editing, as well as specific procedures that Premiere expects you to follow for certain tasks.

Once you have mastered the program, you'll find that there's very little you can't do. In fact, most people can do on-line edit movie that have anywhere near the capability or maneuverability that Premiere does. Luckily with the right high-end video hardware (and perhaps a disk speed) you could create your final broadcast-quality output using Premiere.

Although only a small number of high-end video capture cards are explicitly supported, you can probably import data files you've captured using an analog portable video motion capture program. Premiere works with AVI and QuickTime formats. Until recently the Windows version didn't support DV, although the Mac version does. However, that appears to have changed since the latest version of Premiere Sports' new Video DV200 for Windows includes a copy of Premiere 5.1. Premiere also supports a wide variety of image formats, including Broadcast and PhotoShop.

The multiple-track timeline approach improves on limitations on your track. A project has two standard video tracks with a transition track, and a separate track for titles. A project can contain up to 96 tracks. Although that number of video tracks may seem like overkill, it's a feature you will put to good use when

you're creating an opening sequence, a movie trailer or a commercial that consists of multiple layers and images. Any single display can be collapsed, hidden or locked—capabilities that will be familiar to Photoshop users. You can also have up to 16 video tracks.

The new motion window considers a profile of different playback windows from previous scenes to detect trimming clips and adjusting what points comprise. This is much more like the new monitors you might have in an edit suite for your playback and record machines. The ability to "roll" or set and later the clip while moving the cursor back and forth, adds greatly to the ease with which you can locate audio and video edit points.

There are more effects than you could fit should use in the next 10 years. You can vary the playback size of a clip to speed it up or slow it down. You can change the color of any clip and do motion to stretch. There are more effects, and a way of more than 30 different color correct and artistic filters, singly or in combination to create more effects than you can imagine. There are even filters for audio, like fast filter and compression. Premiere's rules are complex but contain 130 actions like color space and to go partly in motion to the standard animation and 1D animation. If you can't find what you want, you can probably create it using the Transition Factory feature.

I suspect Adobe has never done any usability testing on this product. The test editor is perfectly bewildering. Although this release has simplified the ability to create a credit roll, you must still navigate some tediousness to return to the simplest on-screen tool.

Let me explain. First, from the File menu, you select New, and then Title. This opens up a new window that looks a lot like a paint program. Just the command and the menu are all a little different. When you've placed the text you want, you use the title, using the Premiere menu. Although you might expect it to appear as the project window, it has to be imported and then placed on the timeline. Finally, you set the transparency options, as it is represented over the scene.

Studio DV 1.0

From: Pinnacle Systems
<http://www.pinnacle.com>
 Minimum system requirements: Windows 95, 333 MHz Pentium, 32 MB RAM, P3 30, a hard disk capable of a minimum 4 MB free, retail price \$275.

Studio DV is handled with an IEEE 1394 interface card. This PCI card allows you to attach your DV camcorder via FireWire or iLink port. Once connected you can control the camcorder and import your footage.

Studio DV uses that functionality to dramatically ease the video processor capability bar. Once you've worked with this program, nothing else measures up. The user interface is rich, and the functionality makes editing video as much more than other programs can manage and maintain. Unfortunately, unless you have a DV camera, you won't be able to create projects successfully.

Let's start with video capture. You put your DV camcorder into VCR mode and click Studio DV's Start Capture button. Then you take Studio for her first walk. When you return an hour later, all of your scenes are neatly organized and stored in a preview file that takes up about 120 MB of disk space. (Unfortunately, on base of full-quality DV would require about 13 GB of hard disk space.)

With any other program, you must carefully select the segments you want to copy and monitor the scenes you do and don't need, while Studio puts it all the best done with less trouble.

In Studio DV, you work with the preview file to create your final production. When you click a complete, you attach your DV camcorder again, and it copies into the scenes that we used as the final video to your local drive at full DV quality. There is no further production, so you would sit in a professional on-line suite.

Finally you can copy it back to the DV camcorder, again at full DV quality. To watch the process work a window starts of creating. This is a "wow" by big capital letters with multiple exclamation marks.

Studio DV's working area can be displayed and modified either as a timeline, storyboard, or cut list. The preview screen displays a small thumbnail image on a storyboard. These scenes are automatically created during rendering a very useful feature. The storyboard is based either on when you started and stopped the camcorder, or when the scene changes—for example when you started in for a close-up, is placed from the cut to the crowd at a wedding scene.

Continued on page 71



Adobe Premiere's screen includes a timeline for previewing clips, and a window for playing and generating post files.



Pinnacle's test suite makes it easy to include integrated, and display in real



Studio DV's screen composer lets you select music styles, and create a soundtrack that is exactly the right length for your movie.

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Take One!

Lights...camera...edit!

TCP Lab gets into the movie business with some hot new computer-based video-editing systems

By Scott Cawthorne

Judging from the steady trickle of e-mail we receive on the subject, a lot of people are interested in video editing, whether for home movies or business projects. Professionalism-oriented (and costly) courses and editing studios for selling bread-and-butter or industrial-quality reels, but for home users or businesses with limited budgets, the options have, until now, been meagre, unappealing, or both.

Dedicated video-capture cards have long been embraced by professionals because their higher cost has put them out of the reach of most home or small-business users. Even if home users were willing to pay the thousands of dollars that such cards typically cost, most desktop computers just didn't have the speed/accuracy necessary to make the quality of the video capture worthwhile. By the late '90s the hardware was upped to the level necessary to make the purchase of the next worthwhile units may have already had to serve many thousands of dollars.

Capturing the market

ATI made a splash with the introduction of the All-In-Wonder video card for the home market. The All-In-Wonder was a critical success of the graphics accelerator adding limited video input to the same card that was responsible for the output. The quality of video-capture card hardware rose the level of professional video-capture cards, but it was a start, and it was also relatively inexpensive compared to the dedicated cards.

Even with the addition to the consumer world, hardware hardware inside the PC remained an issue. It's first to be able to capture a video signal with video-capture device, but if you wouldn't wish of the hard drive was too slow to store the information as it was being captured. The same was true of the CPU. With lower RAM prices today, users can easily exceed 1GB (and beyond) of RAM. The issue is not with faster processors.

What remains to be a potential limiting factor is hard drive speed, but this has recently

started to change. Previously, SCSI drives were almost a requirement for any form of video capture and editing because they were the only drives with a high enough transfer speed. On the downside, they were usually far more expensive than IDE drives of similar capacity and required extra investment in a SCSI host adapter.

Recently, the cheaper IDE drives have started a shift towards the faster UDMA/66 interface, and generally cost just a little more than UDMA/33 models. The faster transfer speed between host and drive is ideal for the home video-capturing customer, because it makes it possible to accurately capture video without the added expense of SCSI or the configuration headaches that go along with it.

Does your machine have what it takes?

Even if you don't have the newest and best hardware, you will still be able to capture video, though using a slower system or compression certainly reduces your options. When shopping for a video-capture solution, check the host for maximum system requirements. In use of your machine more or more often it's worth noting that machines or at about the maximum system requirements level will have trouble taking full advantage of the video-capture options, and performance may be less than you'd hoped for. (This may be restricted to capture in only the lower resolutions, for example.)

Even with the faster UDMA/66 hard disk interface now available simply upgrading to a faster hard drive isn't enough for users with older machines. Unlike advantages of the speed of the drives, you'll need a UDMA/66-compliant motherboard (look for a UDMA/66 socket on the motherboard), and make sure you use the faster 40-bit IDE cables as a separate controller card.

Once your system is ready to accept a faster hard drive, the next step is to get a video-capture solution that can be used. Captured in full-quality mode, 40 minutes of video can take up to 4 GB of hard drive space depending on the resolution and method of compression used. It doesn't take long to get up to 100 GB hard drive space when capturing in full quality, so users who plan to edit at the same quality to the source material should seriously consider upgrading the hard drive or adding a secondary dedicated drive. Those who want to capture in low resolution, for use on the Web may find lower capacity drives adequate, as long as there's enough space left to capture, edit, and save the final project. On balance, a second

drive may be the better solution in any case, as using the same drive for both program files and capture can cause degraded performance because of the fragmentation and overhead issues.

Do or not DV (that is the format)

Composite and S-Video have long been the primary method of getting a video signal from source (typical video tape) to capture card, but DV has the potential to change that. Those using an analog-to-digital converter or VCR will probably have to convert themselves with composite-to-video again for now, but a new generation of digital video cameras can use the FireWire interface to transfer data between camera, application, and computer hardware. Typically these cameras connect to a standard FireWire port, and software on the computer is used to pull the signal from the camera to full digital quality.

For PCs that don't come with a standard FireWire port (and most don't), PCI, DV editing solutions typically ship with a capture card that features one or more built-in FireWire ports. These with a model port allows the space of adding other FireWire devices, including external hard drives. The disadvantages of these cards, however, is that most of them are DV only. In other words, capturing from a VCR or analog camera will require a separate capture solution. Cards that feature both DV and analog capture are available, but they tend to be more expensive. Unfortunately, we were unable to obtain any for this month's testing.

Video (Video Editing Software)...not

So much that look of capture hardware purchases, you'll need a program to grab the video and store it into a usable format. There are a few different software editing packages available, and most hardware comes bundled with some software. However, the bundled software is generally a real mess of a more powerful package. While some users may find it more all of their capture and editing needs, those looking for more control over the editing process may want to look into a more professional software solution.

All bundled software comes with the video capture drivers and lower editing features (cutting clips and rearranging them on a timeline for example). Some offer advanced effects, like fades and wipes (or even the classic "star wipe" featured on the movie finale of The Simpsons) after capturing only because the editing types of media, may only be available

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from the cable over the back of the card sticking by stereo jacks in the back of the sound card.

The G400 TV is one of the cards offering Matrox's DualHead feature, which allows two displays to be hooked up to a single card. Because there is only one VGA out, however, this means the second display must be a computer or D-Video. Although the setup isn't quite as nice as using two full-VGA displays, it allows one user to use the monitor for work while the attached PC plays a DVD movie for other computer-related tasks that don't necessarily require full resolution.

The Marvel cards with dual-Channel digital video software, which requires only one port, but doesn't offer as much user control as some other packages. The software is also very particular about the operating environment (certain depth and audio settings), but users can typically configure their system quickly enough.

Capture quality is quite accurate, with frames dropping only at the highest capture quality (but could be problematic, however, in that the Marvel video capture hardware does not allow capture from sources with composite video inputs).

The package ships with a software DVD player as well as PC/MAC software for recording television programs digitally. Most expensive software is included, as are Video Wizard and True Theatre.

The Marvel is designed for use with Windows 95 and 98, though users can get straight graphics card functionality under Windows NT and 2000 (but recognition of this point). The card has a three-year warranty.

Force10 Studio D300 Plus

Suggested retail price: \$249

For major users who are viewing content who want high performance video capabilities of the card.

The Studio D300 Plus uses basically the same software as the Studio DV package based above, which makes the program remarkably intuitive and easy to use. The software also features the same software menu change delay time, making editing a very easy process after work.

Hardware-wise, the D300 Plus employs the GeForce card for a PCI capture card, general controls, compression and frame-out capture, while DV capture, the Studio D300 Plus hardware is not set up to grab video, so users will need to have an encoder and that the frame rate is set to 30 frames per second. This could require quite a bit of user configuration to make the two cards work properly together during playback. When installed, we could not capture audio from the live source as supported by the D300 Plus software in the current version.

Capture quality was top-notch, with virtually no dropped frames in our test playback.

When the card could be problematic in relation to the other analog-to-digital software in the need for two cards (capture card and standard graphics card) instead of an integrated solution. The same with the dual-Channel feature, however, the capture quality of the dual-Channel solution is the superior choice.

Note: Video card in dual-Channel (PCI) hardware is not recommended for printing as with the capture card.



Editor's Choices

DV solution

Force10 Studio DV

Although the Max 200 is a nice card as well as the Studio DV, it's a much cheaper card. For under \$150, it adds a quick and powerful DV solution to a PC, and even comes with a good video DV camera, so hard to beat.

Analog-to-digital solution

Matrox Marvel G400 TV

Although the Force10 Studio D300 Plus is an appealing on the analog side as the DV is on the DV side, Matrox's Marvel G400 TV is more more appealing for a live reason. For only about \$100 more, it offers a lot more control in the system (only one DV channel of input), it allows high-speed capture quality TV and digital VCR functionality, and has a built-in dual-head feature for greater display flexibility. □

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Systems for collaboration, teamwork

Continued from page 77

to determine what core functions CRM systems must provide. Nonetheless, Forrester Research has defined the basic functions it feels CRM systems should have.

- share document management functions, such as archiving/backups, cataloging, and version control;
- link assets and connect them automatically updated information/data of documents;

• collaboration and instant messaging for meeting check with/with me and other users;

- diverse views for many standard document types including visual design and images; and
- workflow and team collaboration on documents, assembly and composition.

The interesting trend here is the availability of database features for catalog and retrieval,

plus team collaboration through chat and version control. In addition, more knowledge management solutions vendors are supplying different services, including Web-based browser access to their programs. This is important as we reach the convergence of CRM, CM and business intelligence systems.

BI-business intelligence

Working the Bell curve as the King's Hill End, Bing and selling more than six dozen

revenues are accounting for declining capital most heavily required up the image of business intelligence. Indeed, an announced demand of accounting data during the last of a six, but accounting, planning, decision support and all the other accounts surrounding BI have undergone a revolution—especially at the low 70s.

It includes all these processes that support planning, problem solving, and decision making. Most BI components and systems have their origins in finance and accounting, although there are strong influences from database management systems and management science. The following are key components of BI.

1. **Database management:** underlying data store for operational systems like inventory, payroll and general ledger.
2. **Data cleaning, transfer and loading:** aggregation, validation and/or movement of data to query and warehouse.
3. **Data marts and warehouses:** intermediate and source points of data consolidated from operational systems.
4. **Database query and retrieval:** basic access through data marts and warehouses, and even to original database.
5. **Data reporting and visualization:** increasingly innovative ways of reporting, that include exceptions, alerts, case-table, and summary plans.
6. **Data mining, exploration, analysis and classification of data using several statistical and artificial intelligence techniques.**
7. **Data analysis and interpretation:** analysis using data mining and request data to identify patterns and trends.
8. **Planning, simulation and modeling:** taking information from steps 3, 4, and 7 for forecasting and testing a business model.
9. **Decision optimization and verification:** taking information from steps 3, 4, 5, and 8 and doing what if/what's best tests.

Think of the flow of data from accounting, manufacturing, and other aspects of business, down through the business stages. Not only does the data get refined, with noise removed and simple calculations made, it is also transformed into actionable information—trends and patterns are observed, defined and tested.

From these trends and forecasts, diverse models are made that may help predict new markets of useful things how competitors are likely to react to a new product or price change. How many new products are going to be required in a new division? It is now possible for an organization to be at a particular point in the future.

But do not think of the flow as an inverted pyramid to some isolated top executive decision. Rather, in more modern organizations, decision making and problem solving are being pushed out to the task groups and centers of responsibility in the downstream flow. It is the central idea of many engines, hence the growing interest in enterprise information portals. These are collections of internet systems that allow organizations to tap into the various stages of BI processing and make the relevant data available to groups and individuals who need it. The trick is to present the right data in a simplified manner format that is easy to use and can be converted to the user's satisfaction.

Sumamangh's Enterprise Information Portal (EIP) is an example of a BI system. The

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key might from 10 to 100 just to make any data available anywhere, anytime in any way (the so-called Web manner), but to make relevant information and tools accessible in a uniform format and quantity that they can use to make relevant decisions in real problems quickly. It's all much more and capable in making to deliver those capabilities, and portal solutions, like *Microsoft's*, are a key ingredient.

Common threads

If you carefully consider *MSN*, *IM*, and *IC* options, you'll see several common threads.

Among all information technology systems there are usually several standard features: the GUI feature interface for ease of learning,

joint work collaboration, features as secure control, document sharing, output in many formats, and database-oriented shared objects and workflows. These more important to small businesses and individual developers. Many software companies are going away either way (most 10 to 50 then typically) and various of their programs, or increasingly free versions of their standard software, changing rapidly the shared, collaborative versions of the applications. In the *IC* field, check out free downloads from *Info* and *Source* to *IM*, check out *Freebase* from *Microsoft* and *Locust* and *IC* in *IM*, everybody knows about the Internet from *ICQ*, *Internet*, *Katanga*, *AmiNet* and many others.

Collaboration and teamwork summary

For feature collaboration features are beginning to show up in a common feature across software, do not assume everything is perfect. The companies a growing downward system. The greatest conflict is a good idea and, like the Internet was between *Microsoft* and *Northern*, is the first move between *Microsoft* and *Net*. In fact, this could be both managing and preparing software, developing a number of product collaboration standards, such as *XML/IM*, *XML/IM*, *XML/IM*, *XML/IM*, just to name them that are not available yet.

Second, managing a healthy, working, collaboration environment is a rough challenge. Remember the old good collaboration results are a summary but not a software solution to ensure good teamwork practices.

In the large number of communicating bandwidth coupled with rapid connection to the Internet and a whole lot of networked devices like paper, cellphones, and other related "smart" devices will present management opportunities for teamwork and collaboration. Plans to be interesting when we discuss that was the easy part. The real challenge will be to create a social environment and create a networked environment.

Always remember to use content and other features to make the best of <http://www.dollarhost.com>.

IC Collaboration Systems Summary

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Exploring Windows 2000

The heir to the NT mantle is a significant product, one Microsoft has bet a large part of its future on. Our first hands-on look at the product reveals considerable strengths—at a cost

By Jonathan Burrows

Of the three new Windows 2000 operating system programs—Server, Advanced Server, and the new Professional, Desktop-style—appears that the latter may be the most attractive. Windows 2000 Pro's improvements in speed, reliability and stability are less threatened by the ease of 25 million lines of new code.

Windows 2000 Professional Desktop

from Microsoft
<http://www.microsoft.com/windows2000/>
 Street price: \$449 (\$249 street) in upgrade
 1146 681 3.51" 40 x 49 pixels
 Screen layout of Windows NT 4.0 (same reliability, stability and performance as the target price, from which users to what NT 4.0 should have been with Windows 2000 stability).
 Cost: One software, no hardware may not work, but it's a first step.
 Speed: 100% of 100%.

Server-based features, such as Active Directory Services (ADS), Windows Management Services, COM+ based Applications Services and the new local Microsoft Management Console will make Windows 2000 Server upgrade and operate a much more challenging task.
 But even so, Microsoft's previous desktop work with a trade off the street price of



Windows 2000 Pro is about four times Windows 95 (although upgrade from Windows 95 are about \$249). In the real world, it appears to be better performance for a higher CD price and possibly CPU and memory upgrade. And at \$449, Windows 2000 Pro can sometimes cost as much as the hardware it is installed on.

However, for many organizations—IBM, Dell, and CLE Systems—the attraction of a new and reliable desktop is more than worth the more price. For example, will be deploying more than 100,000 copies of Windows 2000, making it one of the largest sites for Microsoft's recent desktop OS.

Individual users and businesses are going to have to choose their own side of Windows 2000 Pro: more costs (and time).

New level of robustness

Despite four years of development, 25 million lines of new code and the many enhancements and changes, Windows 2000 is not really speaking to the OS. It is built from the foundation of NT—the Microsoft OS with the new operations for the

Many and robustness

However, even that operation may be somewhat light, as Microsoft still is quoting 22,000 lines of 2.5 days between releases for Windows 95, 3.1 days between releases for Windows NT 4.0. Meanwhile, the new Windows 2000, undergoing 22,000 lines between releases, had to be in 10 days of testing, according to Microsoft's general manager, James Hines, when Windows 2000 was still only known as mid February if there was any thing. Microsoft will find by how a desktop OS that can start in much less and OS's for server performance.

Continued on page 23

Apple unveils graphite iBook

The new Apple Computer Inc. chief executive Officer Steve Jobs unveiled new iBook computer portable computer
 PowerBook and the latest single of Power Mac G4s during his keynote presentation at the Macworld Expo in Tokyo in February



The three new iBook models each come with 64 MB of memory and a 4 GB hard drive, while the graphite-colored iBook Special Edition includes a faster 360 MHz PowerPC G3 processor. The iBook G3 will cost \$599, while the slower graphite and titanium models are priced at \$699 and \$799.

"The iBook has been a big hit with consumers, students and educators, and we want to share it even better," said Jobs. "The new iBook Special Edition is the most elegant iBook yet."

Based at Apple's Cupertino headquarters, the new powerful PowerBook line contains PowerPC G3 processors starting at speeds of up to 300 MHz. Other features include 120-mm slim design, key ball in Firefox ports, and Apple's First Click Pro 1.1 video-coding software. Prices for standard configurations—with a 400 MHz processor and 64 MB of memory—start at about \$599.

"The new PowerBooks is the best tool in the world for creative professionals," said Jobs. "For example, with First Click Pro video-coding software, it's the ultimate mobile device suite."

Apple's Power Mac G4s first line (no processors) at \$299, \$399, and \$599. All of the new models—iMac, PowerBooks and iBooks—also support Apple's iMac/iBook networking solution.

Of particular interest to the Japanese market, Jobs announced that the forthcoming Mac OS X will include high quality Japanese fonts, through an agreement with Japanese font developer Corporate System Manufacturing Co Ltd. The last time was based on Corporate's Hangeul font.

"Capturing the beauty and richness of the Japanese language and call characters has always been beyond the capabilities of present computers," said Jobs. "With our premium quality fonts and the largest character sets ever sold, OS X will make high-quality publishing a reality in Japan for the consumer, professionals and for the time when it's."

—Mitsuru Ito

Anticipating Linux 2.4 and KDE 2.0



Linus Torvalds

major improvements over 2.2, 2.4 promises even greater improvements for the Linux operating system.

First a word about release numbering. Linux kernel releases come in two types of major—new numbered and sub-numbered. The sub-numbered series, such as 2.2 and sub-series releases such as 2.2.14, are called developers, or experimental, releases. They are

work-in-progress—the construction sets for the new grand releases.

In the corporate world of software development, experimental releases behave behind a veil of secrecy, but Linux is open source and uses the open experimental releases available to anyone who wants to try them out—anyone willing to put up with bugs and other difficulties. Usually new three releases, so "production" releases—releases that are used for real life—come up and changing to perform critical functions. Many Linux sites now experimental releases are experimental releases to keep down new developments, to concentrate feedback in the development team.

Once an experimental release has been declared stable, and the latest development team has met its goals goals, some changes and changes are done to the release and it is considered as a stable new-series release, ready for general use. This does not mean, of

course, that every single bug has been spotted and removed, but the obvious ones have been closed.

The 2.3 experimental series is closer now to its end, from that will emerge, very soon, the 2.4 general series. As long as spotted and updates are made to the general release, it will evolve with sub-releases—such as 2.4.1, 2.4.2, 2.4.3, you know the drill.

And as time as the 2.4 general series is released, a new 2.3 experimental series will begin. Thus the Linux kernel keeps evolving.

Keep in mind that Linux is kernel engineering mostly based on releasing to the community changes used by Linux packages. And the Linux 2.4, for instance, is based on the Linux 2.3 kernel, which is in contrast to talk about Linux 2.1 when you actually mean that that 2.1.

Now, as to the new features of Linux 2.4. As always, with these limited options, my top

Continued on page 23

Antidote for Linux 2.4 and KDE 2.0

and desktop (see *For Fanservice*, below) because the necessary applications for the kernel depend on them. What follows is a summary of the new kernel releases (3.0 & 3.1), desktop updates, and how to expect the third-party development (KDE 3.0).

Exclusive enhancements

Although it doesn't affect kernel users, there were some additions to Linux 2.4 that have limited the incorporation of Linux into non-x86 (and "big endian") systems. Previous releases of Linux increased the number of non-x86 architectures supported as well as the number of unique users in a system. Linux 2.4 provides a subtle, easily visible process limit and increases the maximum number of users to approximately 43 million. This along with improvements to the Linux scheduler efficiency allows Linux to better handle large numbers of concurrent processes, such as you might get when running a large scale database doing large numbers of online transactions.

Likewise, on a machine that can handle a Linux 2.4 can deliver more than 6 GB of RAM, more than 16 Ethernet cards, more than 128 extensions, and multiple IO-APICs (advanced programmable interrupt controller). As always, the number of supported hardware device drivers has increased significantly from previous versions.

On the multiple-CPU side of things, the Linux 2.4 processors have been optimized for eight or more processors. Look out Windows NT, 2000, or whatever you want to take this multi-processor Linux on the march to its new world—this is now, or when you want it.

If you're looking ahead towards development of the Intel Merced (4.0) processor, not kernel Linux 2.4 will cover one of the latest operating systems available for this new chip. Intel will be using Linux for testing the processor and the kernel development team is already talking with the Intel architects of the Compaq Alpha and Sun Sparc4 processors.

And, of course, Linux will be supported by the new Gracore chip from Transmeta. After all Linux Transmeta needs for Transmeta Linux on the Gracore has already been publicly demonstrated.

Plug 'n' Play, USB, FireWire support

Linux 2.4 offers improved support for Plug 'n' Play devices. Previous versions supported Plug 'n' Play devices through a user mode utility, but Linux 2.4 allows these devices to be used through the host processor and controllers of the device as soon as they externally. The new kernel also supports USB (universal serial bus), a major set of PCs. With these new changes, Linux 2.4 supports many additional pieces of PC hardware.

The new Linux support for USB (universal serial bus) has arrived. Linux support for USB devices is still in its early days, but the 2.4 kernel supports a large number of USB devices, including keyboards, mice and speakers. USB support will continue to improve and evolve during the development cycle of 2.4. Support is expected to grow even faster. FireWire support has been added to the kernel, hardware, which is mostly growing in popularity, is in support for many high bandwidth devices.

Other improvements

On a small, experimental scale, support is being developed for "Win4Linux" as "sub-machines." It will be a while yet before this

comes to fruition, but the header has been placed in the kernel.

Parallel port and cultural connectivity support have been improved in the 2.4 kernel. Enhanced parallel support using USB, for data support, is a new proposal.

Support for speech recognition cards, which began in some later releases of the 2.2 kernel, has been added. Likewise, some additional support for sound, TV, and video cards.

Linux 2.4 offers significant new features for

those who use Web servers on Linux. A new kernel Web server, libwww, now presents HTTP requests without having to connect to any web server, such as Apache. It is not designed to replace Apache, but to provide a more direct delivery of web pages.

This will make Linux-based Web sites more accessible than ever on the Internet. Where will it all be enabled? The kernel development team doesn't want to use web servers, but they think everything is

ready—there are no artificial marketing deadlines to meet—as a general idea of what is to come. The days indicate a period of delay by giving, by the time the release date is set, release should be considered if it has already happened.

It really takes the packages a few months to incorporate the new kernel in their distributions. Unfortunately it looks as if Debian GNU/Linux will only just be getting ready to release the 2.2 kernel by the time 2.4 is ready.

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Exploring Windows 2000

Continued from page B2

In fact in our tests, which have involved dozens of installs of new software and over 10 different benchmark runs, Windows 2000 Pro has crashed only twice in over 50 days of testing. In fact, Windows is even now about to ease up the Windows 2000 entry fee for the sheer pleasure of not having to reboot so often. But before you do, wait for our upcoming head-to-head of the two Core Lanes using the WDM simulator, which allows Windows programs to run on the open source OS.

However, even though Windows 2000 Pro may be more robust, there are still some reliability problems associated with existing applications. During our tests, we found that older Windows software—Adobe Photoshop 4.0, Corel WinPaint 8.0, Microsoft PowerPoint 95, Microsoft Visual Basic 4.0, Symantec Visual Page 1.1 and almost a dozen other programs—had a tendency to freeze more frequently on Windows 2000 Pro than on Windows 95. So appears the most may be with Windows 2000 API and DLL changes that cause older versions of programs to break. So expect to hear more news on how to make older versions of your applications behave when switching to the new OS.

At Microsoft's site, you'll find a Web page (<http://www.microsoft.com/windows2000/compatibility/compatibility.asp>) listing all programs identified as having trouble in some ways, certified as Windows 2000 ready, or programs in considered Windows 2000 ready, after minor tweaking, or install properly and run effectively in Windows 2000. To be designated certified, the same testing is done by a third-party firm, which results that an application adheres to

the new standards for Windows 2000: stable, reliable, robust, or not otherwise the word for robust and the acceptance of DLL certified.

Certification also verifies that the program can take advantage of new Windows 2000 features, such as APT, Enhanced security, and Microsoft Management Console functions. As of the end of February, only 21 programs had been certified (some Microsoft products like Office 2000 are ready but not certified). <http://www.microsoft.com/windows2000/compatibility/compatibility.asp> lists various apps on Windows 2000 Pro, I have not had any problems with the actual process other than those—the programs have worked pretty much flawlessly in my tests on being close to a Dell Latitude 2700 with 76 MB of RAM and a 12 GB drive, a lot of software can't be tested. One would fully expect conflicts in the context as in the early days of NT but so far so good. However, I haven't tried any games, and there where compatibility would be needed if they were to run in general. Windows 2000 Pro appears to have a good record for stability and robustness except in two areas running older Windows code, and robustness on installs. The 2000a headcrashers may not include much because more than half of the software is certified. Finally Office 2000 required a reboot before the applications could be run. This is less of a problem on the desktop, but is a real concern on the Windows 2000 Server side. As a result, Microsoft is studying to address on install one of the requirements for Windows 2000 certification, so robustness in the two shared aspects. With Windows 2000 Pro, Microsoft appears poised to deliver the substantial strength reliability on the desktop that Linux and Unix was, now they

Full Windows 98 Interface

Windows 2000 Professional—all of the latest features of the Windows 95 and Office 2000 suite, including starting items on the status bar, Task, as the system tray at the right end of the status bar, instant mouse that file last-used options and right mouse access to a number of configuration options for the desktop.



A number of Windows users have also been updated, including Windows Explorer which has increased a number of items from Internet Explorer such as the Search, Favorites, and History windows on the left side of the screen. Windows Explorer now includes Internet Services, which consistently speeds up searches for text in files.

There is also a new synchronization program that allows a user to download Internet and shared network files, such as those offices, then it synchronizes those files with the original when connected back to the LAN or the Internet. This is a big move up, but I would have liked to see the program incorporated right into Windows Explorer so some of the

synchronization options and inconsistencies could be more consistently done there.

In addition, the Accessibility suite of programs have been released with a better Magnifier, Narrator, and GUI Keyboard. The system tools have also improved with much better utilities for Backup, Disk Defragmentation, and System Information. Task Manager can stop running applications (and all their child processes) more clearly than ever. Finally, for game freaks, there is a new Painted game that comes off the second and video features of Windows 2000 (or more properly the new Dell with an ATI Rage card).

One major point of contention there is not a good program to manage the registry. I get system programmatic appearing in the Registry or in the publisher lists of Windows Explorer or some right-click options in startup programs that I would like to control in fact. Inquest Edit is a desktop program that is not helpful equal to the task of managing the registry that at least the status of Windows 2000 Pro now match those of Windows 95, so who can it be completed.

Better runtime speed at a price

Including Windows 2000 Pro was straightforward on a number of machines, but not all. And when things were wrong it was a right mess. Also, Windows 2000 Pro did not always run well on all of the PCs tested. We found that running Windows 2000 Pro on older Pentium processors (300 MHz or less combined with 48 MB or less RAM) was just not workable—especially that using the relatively low response time on the old 5400 RPM disk with 55

Continued on page B2

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Microsoft launches Windows 2000

By John Boudreau

It's official. Windows 2000 is upon the business. On Feb. 17, Microsoft Corp. released the latest installment of its core personal operating system called Windows and co-sponsors.

The launch of the OS represents a break-through for both desktop computers and servers, according to Jimmie White, president of Microsoft Canada. Speaking at a luncheon at Toronto's Royal York Hotel, White said the new OS will play an integral part in making business around the Internet.

Starting around US\$4 billion on a direct estimate basis of more than 5,000 staff over three and a half years, Microsoft believes Windows 2000 is as ready as it can be, according to White. "Windows 2000 gives a tremendous amount of encouragement," he said at a press conference following the launch.

Specifically, Microsoft released Windows 2000 Professional (for desktop and laptop PCs), Windows 2000 Server (for department use) and Windows 2000 Advanced Server (for Web and business-critical applications). A fourth product, Windows 2000 Datacenter Server, will be released at about three or four months, according to the company.



Hardware makers are also promoting the release as a breakthrough. The new OS is "one of the most reliable and stable platforms," said Peter Carter, president of CompuLink Canada Inc., who also spoke at the press conference. He cited Windows 2000's support for hot-swapping components of a computer without having to shut it down as an improvement.

Other strengths touted by Microsoft include greater reliability and stability, more drive and directory management, and stronger security.

Security is particularly vital for Internet-based business, and Rick Mott, Windows 2000 program manager for Microsoft Canada, who was also present at the event. He said the security features have to be "proven and easy" for individual users as well as network administrators.

However, industry analysts have cautioned corporate users against rushing to upgrade their entire system to Windows 2000. While companies will see benefits in many areas, International Data Corp. says the acceptance of Windows 2000 will be slowed by organizational concerns about its stability.

Compu Group Inc. has also warned against widespread adoption of Windows 2000 Server prior to the first service pack release.

However, Microsoft stated that several Canadian firms are already using Windows 2000. Quebec's Lamerre New Link is using the platform's virtual games network capabilities to help run its online business, while Western Canadian Union, Tulsa, has also been quick to upgrade.

White also downplayed reports stemming from a leaked Microsoft memo that claimed Windows 2000 suffers from thousands of glitches. Calling the reports "unbelievable," he compared the company's bug-hunting

process to spell-checking a word processing document, saying that not all flagged words are errors.

Though he said Microsoft is aware of any specific problems, according to White, "It's a pretty huge. Computer science has not solved that problem."

For home and consumer PC owners, all such worried reports regarding Windows 2000 to Windows 1998, Internet users are advised to wait for the Windows Millennium, which is specifically geared towards consumer and game use. That OS is due out later this year, White suggested that gamers stick with Windows 9x for now. "For graphics and games support, the Windows 9x platform is much richer."

White also said Microsoft is doing all it can to avoid confusion between the corporate and consumer versions of its platform.

With the rise in popularity of computing devices such as Internet-enabled products and handhelds as well as more demanding high-end applications, Microsoft has apparently given up on relying on operating systems under the Windows 1998 moniker. Different platforms will be used for different systems, according to White.

While noted at the company is still looking to build on all-current OS, White implied such a simple "No."

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Exploiting Windows 2000

Continued from page 34

MB of RAM. The maximum memory threshold for the OS is 44 MB, but we found no MB as optimum. The RAM amount will be quite a step-up for many users, but may force a relatively expensive computer upgrade.

In testing, the running times we experienced with Windows 95 and Windows 2000 Pro on the same Dell machine leading Windows 2000 Pro after completely wiping off Windows 95, for some reason we found Windows 2000 Pro startup times for applications to be quite variable—as much as plus or minus 10 percent.

Our results seem to suggest that memory may be important, as 44 MB of memory is more than a 300 MHz or better Pentium, Windows 2000 Pro outperforms Windows 95 by about 30 percent on average, but by as much as 40 percent. However, these times may be hard to duplicate because of the wide variations in performance, especially on startup.

We noted that Windows 2000 Pro had a tendency toward picking alternate files. These variations were not noticed in startup times in particular. Windows 2000 Pro can behave at times, for example, a previously copied, single Open File dialog box, because the timing due the look time is unpredictable as if Windows 2000 Pro were doing garbage collection in interdependent process like in Java.

We also found that several times—first Pentium-based computers and routers, among file (even on the new NTFS filesystem) and occasionally customer programs (for example, a new program that generates the first 10,000 prime numbers)—we rarely observed the as Windows 2000 Pro they did on Windows

95. However, the bottom line is that with 20 million lines of code, the Microsoft has done a sterling job of delivering a variety of MT on the desktop that is generally better.

Who is going to like Windows 2000 Pro?

First among the likely fans of this new OS are security-conscious users who will appreciate the improvements over Windows 95's security features. HTTP, for example, allows powerful security access rights to be placed on files, folders, and even processes. In addition, it is a fully easy-to-manage security policy.

Also, users on your machine and sharing of its resources may enjoy the new Remote Access user and Windows 2000 Server. This is superior in many organizations large and small because secure dial-in service (DCE) stacks on a customer's PC can have depend on the location leading highly automated machines with no access problems.

Finally, support for PCI and other security for managing, plus online file synchronizations, some point Windows 2000 Pro on you with a way ahead of Mac, Linux, Unix and other desktop OSes.

A second group who will welcome Windows 2000 Pro are small business professionals who have in long a laptop with dual operating systems and 16 to 32 GB of RAM, and prepare to down software and processes when installing their new machines. Windows 2000 Pro no longer plays around with Windows 95 in terms of support for devices, USB and PCMCIA, and much-improved power management. The OS will not do as the other users of dual every 1 day (or even less) and will be more welcome dual systems around.

On the home or small business desktop system, the decision to switch will be made tougher. This is the category in which the price of the OS and possible expense of hardware and necessary upgrades will be felt the most. I agree with that opinion of PC users who continue against heavy upgrade. You only have to be sure to check that of your programs, devices and data (especially if they are more than two years old) will go OK on Windows 2000 Pro. On the positive side, many times the new or check your existing needs compatibility with the OS by checking back support with other before doing that, or on a machine.

Also, do remember before (but on the small Windows Millennium Edition (the upgrade to Windows 95) and dual Linux with no PCMCIA) Windows machine doing what they have to offer may be worth the wait, especially for the

home and small business user. Windows 95 will easily users who want the broad range of Windows features and gaming apps, plus some new use of the new OS. Windows 2000 Pro, dual Linux will give stability and security largely except with Windows 2000 plus a will run an even improvement of Linux apps. We will have to see what we know with Windows 2000 Pro Windows apps—but at least the price of Linux is right.

In fact, price is the problem with this new OS. In Windows 2000 Pro, the amount of delivery when it should have in Windows NT 4.0 four years ago, but the price is wrong. Most hardware and software prices have dropped by 40 to 70 percent in that period. Windows 2000's pricing definitely has to be fixed. □

James S. Spector is a consultant and writer who can be reached at jss@win95.com.

Runtime: Windows 2000 Pro vs. Windows 95

Test	Windows 2000 Pro	Windows 95
Start in newly formatted hard disk	1 hr. 40 min.	48 min.
Load up the operating system	1 min., 40 sec.	1 min., 20 sec.*
Windows 95 startup	10 sec.	12 sec.*
Windows 2000 startup	2 min., 17 sec.	2 min., 13 sec.
Windows 2000 startup	4 min., 12 sec.	4 min., 10 sec.
Windows 2000 startup	5 min., 17 sec.	5 min., 13 sec.
Windows 2000 startup	2 min., 17 sec.	2 min., 14 sec.
Windows 2000 startup	2 min., 17 sec.	2 min., 14 sec.
Windows 2000 startup	12 min., 17 sec.*	12 min., 12 sec.
Windows 2000 startup	12 min., 17 sec.*	12 min., 12 sec.

* When software was more than 20 percent from original test date.

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E-mail server & gateway

Continued from page 51

webpage and server name for Windows Mail sharing.

- **Setup directory** This is a listing of user accounts, which can be imported by an LDAP client. Active can be imported.
- **General mail settings** From this page, you can control access to your POP server, and test the mail retrieval mode. The default mode is appropriate for most dedicated e-mail servers, but for dialup, you should choose ESMTP if your ISP supports that protocol. Otherwise, you choose mail drop mode.

• **User accounts** This is where you create a user name and password for each of your users.

• **Advanced settings** Here, you can set up and manage protocols and authentication keys. This is a file sharing and collaboration tool, which may be as useful as the Internet services in most offices.

There are other links, which are fairly straightforward. Once this step is reached, you can start to test the server. As a gateway, it can be run as a proxy or not. It is a matter to run your Web browser without any configuration at all, it will usually connect to a Web site as though it had a direct connection to the Internet. It's currently running in proxy mode, which means I have to input the IP address of the e-mail server in my Web browser.

All the basic protocols are supported, including Real Audio and Video. The only one I am aware that isn't currently supported is Microsoft Streaming.

Free team Web portal

Continued from page 51

- **Control the group and its services** affect each member.
- **Chat, Discussions, Team News, Ways for team members to communicate.**
- **Calendar, Goals, Projects, My tasks, Team tasks** Methods of managing tasks among the team members.
- **Issues, Attached Issues, Manage** Members for resolving problems.
- **Documents, Links, Ways to bring local or remote PC information to the attention of the group.**

To date, the OutSystems interface is free of advertising ads (the free version also has some, and Anylog has more). Indeed, OutSystems gets its return by selling online selling a more sophisticated version of its team software. In addition, it gives free team site access larger than 10 MB. Furthermore, charges a monthly fee to the extra storage.

Based on my discussions with companies at Comdex and the recent Toronto Internet World event, these sites are just the tip of the iceberg to the team and collaboration services on the Web. All the major players—Com, Microsoft, Sun Microsystems and even its offering direct access to their utility suite applications use the Internet. Web storage sites will no longer need software on their PCs. In addition, a host of on-line services are testing in the wings to offer a broad range of team services via Web portals. Anylog adds to my understanding and event feelings is an indication of what lies ahead for your team's collective attention—and it's just a hint of what's to come.

— Jacques Larue

Before I installed a e-mail server to gateway to my network, I was using a similar setup based on Windows NT that consisted of third-party gateway and mail server programs. I haven't been using a e-mail long enough to have opinions on long-term reliability that the same process was easier than in Windows NT and performance seems to be better too. As for price, there's no comparison at all.

I tested version 1.1 of the e-mail product,

Version 4.0 is in beta, and may be released by the time you read this column. It supports more Internet connection scenarios, and a more flexible use. For example, version 4.0 lets you determine how often the mail server checks for mail in a dialup situation, and a great you have control over things such as incoming messages that are incorrectly addressed.

In summary, this is an excellent Internet solution for small business. The installation

and configuration experience are pleasant, and no more difficult than in Windows. The software is free, although there is a modest charge if you want a CD-ROM and printed manual. Support services are available at a reasonable cost, and are a great money Saver, especially for Linux novices.

For more information, visit the above website, where you can download the manual, determine the suitability of your hardware, and find some interesting screen shots. □

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Online & Connected

Internet Trends • Wired and Wireless • Online Services • Work & Play on the Web

Toronto papers create
Canada's largest online job site

By Jeff Kline

Three Toronto-based newspapers, the *Globe and Mail* and the *Toronto Star*, have teamed up to create what they call a Canadian employment mega site, **Workopolis** (<http://www.workopolis.com>).

The site, officially unveiled at a launch event at Toronto's The London Store this Jan. 23, has more than 11,000 active job listings, 10 million page views per month, and over 140,000 resumes on file.

Mail is Canada's largest job site. Workopolis is created to offer the maximum amount of resources to both prospective employers (who provide the resume stream) and job seekers (who can see the site for free).

The site is clearly and simply laid out, allowing job hunters to do quick searches by keyword, or more advanced searches by date, location, or in alphabetical order. It has a wide range of customizable options, links to related websites from both daily newspapers, and other online resources.

Workopolis president Ken Peters says the site is a major step forward since the *Globe's* previous job site (Web search using the *Globe's* website) URL, are automatically linked to the new site.

Peters says all the materials to make Workopolis Canada's leading job site are in place, including "lots and lots" of job listings, powerful and simple search features, and



many programs and options for employers looking to use the site as their search or e-recruitment engine.

Employers can choose from three levels of programs for ongoing access to Workopolis resources, according to Peters. Monthly rates start at \$1,200 and can go to about \$1,000, depending on the services desired. Smaller businesses can also use the site, with rates starting at \$200 per month for access to the site's resume management service, or \$300 for a single job posting.

Monetary competition

Workopolis represents major competition for the Montreal job site (<http://www.monster.ca>) or (<http://www.monster.ca>). Montreal has a very well

run Canadian operation based in Montreal, and can be expected to put up a good fight against the new competition.

The *Globe* and *Star* alliance, however, will be able to utilize the resources (classified job listings) of the many editions of the two dailies and the other newspapers they publish, whose readers concentrated in just one part of the country.

While the Workopolis site has had a phenomenal marketing push—its site at employment month's history was down for more than two hours in the week now being remembered—as a reference operation.

Peters says that an addition to the millions of dollars spent on the site's staff and technical infrastructure, more than \$7 million is owed for marketing and advertising to promote the Workopolis site as its first year.

One possible additional concern for the two competing Montreal dailies to enter into and work together on Workopolis is the case of Conrad Black's Montreal *Star*. In just over a year the *Star* has been sold and its future is uncertain. It is possible that the *Star* will be sold to a Canadian buyer whose newspaper readership—especially French—and some of that growth has been at the expense of the *Globe*.

To date, the *Star's* Web site has been modest, usually consisting of a website, only for rather than Web site (<http://www.star.ca>). With Workopolis, the *Globe* and the *Star* have made the first step in creating the online job market. □

Apple Canada
launches
online store

Following the lead of its U.S. parent, Apple Canada has officially launched an online Apple store for its Canadian customers.

Senior marketing director of corporate communications for Apple Canada Inc. in Markham, Ont., said the online store will have the same look and feel as its U.S. counterpart, and offer Canadian the same range of hardware and software products.



The Canadian e-commerce site (<http://apple.ca>) is comprehensive, it will feature a monthly computer, and will be linked to sell and U.S.-based and Canadian-specific promotions.

"It there is a distinction in the U.S. [parent] store, it will be mirrored in Canada" [marketing vice], "the Canada is a unique market, as consumers should not expect that it is the same as the Canadian store will be identical to the U.S. store. Consumers are made for our market needs in Canada, and Canada is a different market than the U.S."

The Canadian launch is part of an ongoing effort of the Apple online store around the world. There have already been launches in more than 15 other countries and Marketing said a good deal of time was spent testing the online shopping experience for the Canadian e-commerce store. Through the site, customers can configure systems they want ordered or take the specifications to their local Apple dealer to have the order built.

Marketing didn't see the online store as competing with Apple's established 140 service stores across Canada.

"It is designed more for the convenience of customers who don't have easy access to a dealer," he continued. "And in the broad geographical area of Canada, there are the territories who will benefit from the store."

Only some retailers follow the online store will have their inventory.

On Ontario-based Apple dealer who referred to various accessories, said the online store will also feature some accessories.

"It is hard to take away their sales," he added. "You're not taking away a product line."

Continued on page 10

Weaving your own Web site: Part 55

An in-depth look at Cascading Style Sheets Part 13: Real-world use of CSS

By Keith Schwabach-McNair

After years of articles has systematically looked at all of the properties belonging to the Cascading Style Sheets 1.0 (CSS 1) specification, throughout all of the code examples and comments about browser compatibility, not much has been said about when and where you should actually use CSS in your Web pages. There is an excellent answer to this question. However, of an answer that is in the green, it would be "it depends."

Each Web site is different, an effective site design might be applied depending on the particular needs and requirements of each site. Having said that, though, there are a number of considerations that offer some rough guidelines on the best approach to applying CSS across a Web site.

Browser compatibility

Compatibility is a big issue, and it is one that Web masters can be certain they are facing. Web pages exclusively for one of the two major browsers. The site becomes more complicated when it comes to CSS, because there are differences in CSS compatibility not only between the various web browsers, but also between the versions of the same browser when viewed under different operating systems. This is often having a browser compatibility being handy (such as the site printed on the mobile site of 2007) or a small web page CSS code into process.

Realistically speaking, if you are planning to use CSS, you are trying to save your page using the latest version of the two major browsers. If you intend a significant portion of your audience use other versions of the major browsers, an alternative

browser you should consider before adding CSS to your page. This site is not as serious as it may appear, consider that majority of users use one browser capable of displaying the effects of a latest version CSS code.

One point to take however, not only does CSS code that is widely compatible between the two browsers, at the very least, don't use CSS code that will produce negative effects on one browser.

Try to use "safe" CSS code whenever possible, but don't consider this an absolute rule. If you do plan on using CSS code that does not fully function between the two major browsers, ensure that your content can still be read by default. In other words, make sure your Web page doesn't depend on CSS to be readable to the user.

As the time of writing, Microsoft Internet Explorer on page 10

Ready to Review

Continued from page 94
work online. You'll find the text is larger and scrolls differently than it will on the Windows system. Also, the document may not be visible as you can see where you are in your document.

Outline view (View, Outline) shows you the structure of your document. Here you can reorganize the text on the page by dragging headings around the page, and you can collapse and expand your document so only the headings are displayed or read the text itself.

From Previous view (File, Print Previous) is a good way to check your document before you print it to ensure the layout is correct. In this view, you can see more than one page at a time by clicking the Multiple Pages button and entering the number of pages you want to see. You can also edit past text in this view by clicking the Inplace button to toggle between viewing your document and editing it.

Master Document view (View, Master Document) is useful if you're creating a long document and you want to assemble it from a number of smaller documents. In this view you can combine these documents together and add sections and tables of contents that span the contents of a number of separate documents. We looked at Master documents in a past issue of *The Computer Paper* file online at <http://www.computerpapers.com/techcolumns/techcol07/17120003.htm>.

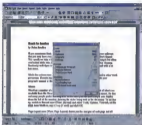
Toolbars

The toolbars at the top of your screen are fully customizable and you can choose which items appear or not. To see the range of toolbars

available select View, then Toolbars. The most useful toolbars are the Standard and Formatting toolbars so these contain the buttons you'll need the most common tasks. A

long list. You can also change the position of any toolbar to any side of the running window or have one float over the others. To move toolbars, grab the double bar at its left or top-

right side, right-click a toolbar and choose Customization. Choose the toolbar to remove to an original state and click Reset and Answer: Yes at the prompt. Click Close to return to your work.



The Show/Hide toolbar can be used to give you visibility into the document.

toolbar is displayed if it has a checkmark by its name. If it isn't displayed you can make it display by clicking the checkbox by its name.

Buttons containing buttons have a toolbar button by the left side as you drag the button off the toolbar and drag it into the vis-

ible pane with your left mouse button. For its toolbar, if it is floating and drag it onto a new position. You'll see an outline of the shape it will be and where it will appear as you can position it accurately. If you're unsure with your toolbars and want to return them to their orig-

Paragraph markers

Perhaps one of the most confusing aspects of Word, particularly if you are a WordPerfect user, is how text is formatted. Word marks details of the formatting characteristics of a paragraph inside the paragraph marker that appears at the end of the paragraph. This is a relatively confusing because the paragraph marker is usually invisible so you can do all sorts of things with a sentence without what you're doing.

To see the paragraph marker in your document select the Show/Hide button on the Show/Hide toolbar. You'll see the paragraph markers (¶) at the end of every paragraph. Whenever you insert or copy a paragraph and you want to take it out of its setting with it, remember to take the paragraph marker too. On the other hand, if you highlight the text in a paragraph and don't include the paragraph marker, you'll copy the text only and not copy its paragraph formatting.

If you have a paragraph that has formatting you want to copy—say line spacing, or indentations, for example—you can copy the formatting and copy the paragraph marker. When you replace the paragraph marker of another paragraph with the one you've copied, the formatting of the paragraph changes automatically to resemble the formatting of the paragraph whose marker you copied.

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You have mail

Continued from page 69

In Lotus you could attach type the show as one long line that wraps around on the screen, or break the text into multiple paragraphs using the linefeed ("newline," symbol, or in the preceding example "N" so that the "N" flag can be used to put a subject line in the message.

The mail programs in Lotus are sophisticated as a mail reader—complete printers, but surprisingly simple. Just typing mail will bring up a screen of your Lotus Notes layout.

You can attach text messages to messages, and, again, more messages to another mailbox, so you know the text editor can a spell check, auto-indent, and so forth, get how many lines of display you want. All that information is on the main page. Type once mail to find out all the options.

I'm including some of this information (most of it) on every option, it always works, it's very useful in screen editors, and getting to know it gives you another idea about how that it is a powerful skill to enter these systems.

Microsoft text readers

Lotus mail is a mixture of the oldest kind of command-line oriented reader—simple, useful, but a little annoying to deal with—as a data base to display text using the Unix text editor to come up with something more along with the ability of mail access editors, such as Emacs, full screen mail editors, such as Elm, Elm, which stands for "electronic mail for lusers" provided the ability to scroll up and down the message screen, and a message by typing the letter key, typing by typing "r" or forwarding by typing "f" define what and includes with a file in the mail file and installed by default on a Red Hat system. Typing more often will create details on using this, including how to send and receive mail messages with it.

You may be the last known and most widely used of the text-based mail access programs. Perhaps designed to be a better Elm than Elm and the same Elm mail is an acronym "Pine is an Elm"—one of those self-referential messages such as CMC (Cousin and Uncle), of which this program is one. Lotus mail is a text-based program that has been kept up to date very nicely. It can now read HTML-based messages and can forward messages to start up a Web browser, such as Lynx for help links. With its useful help system, it is easy to use and flexible. One of its best features is all feature editors. Pine, which includes forwarding messages may be new users. Pine is an easy to use and powerful editor, also makes a very good candidate general editor for Lotus mail.

The best way to get to know the advanced

features of Pine is to type a or an up, and a for configuration from the Pine main menu. At each configuration option, type ? for additional information. If you like text-based mail readers, Pine may say you need perhaps Pine is installed by default on Red Hat systems.

If you're a beginner and want almost total control over how your text-based mail reader looks and acts, Pine might be just the tool for you. You can use your text editor to edit the Mail file. It is highly configurable and Mail also makes mail made of kinds of connecting Mail configurations like available on the Internet. Mail, too, is installed by default on Red Hat systems. Check "mail menu" for additional information.

Mail readers

I'm primarily in kind of character-based mail readers that I can show you how to use, but I can understand how many who want their Internet to use Windows or Macintosh systems might find them a bit quaint. So, in my way to be about choice, and your choice of a mail reader to use your own browser.

If you're now in Lotus, or, if you're more between Lotus and Windows, you can use one of the most popular mail readers around. Microsoft's *Communicator* offers a well-designed graphical user interface (GUI) that includes a simple, readable panels and drag-and-drop of messages into folders. It offers POP and IMAP connections to your Internet access provider and, uniquely, displays HTML messages well (although you should be aware that HTML mail is limited to what is in the Unix world). Its Address Book feature can be joined between Lotus and Windows or Lotus and Mac environments. URLs include mail messages can just a click away. *Communicator* is a decent mail reader email, but it lacks the punch of programs usually associated with Unix. Therefore it's an easy way that many Linux users who are not familiar with more native in the environment.

To be honest, a few of the more graphical mail readers look like the screen on a Windows program. I don't see it as a reader called *Outlook*. Clearly designed to suit Windows widgets, it is not but has built-in these options. This mail reader is based on the Tk X-Window widget set and more generally works.

able. If you are running a lightweight text-based message such as PINE or PINE, you may find *Outlook* as Mail a good match. Both are fast and have pleasant views. Mail, a simple reader, has all the features: scroll, copy, delete, message (open, close, copy, etc.). Mail also offers (Mail) and HTML attachments. It allows you to export the view as screen shots, but as it is not a full-text display (Mail) is still better, lightweight, and a good candidate for all have useful. The widget set is the simple GUI development.

Mail is a *Standard* product. The Mail in *Outlook* stands for *Standard* (not *Standard*), the special in *Notes* mythology that runs up and down the screen, but, again, not trying standard language from the design. Looking at the bottom of the screen at the right at the top of the screen and more. Definitely not your ordinary mail.

Among the advanced features, Mail allows you to create a database of read messages, assigning keywords to them for quick lookup. It also has a *Mailbox* feature called *Mail* from *Mailbox* that "links" to messages which *Mailbox* has taken from your inbox and adds them back (no "new" or "old"). Mail is usually not called by default in a Red Hat setup.

If you're using *Outlook*, you'll likely want to explore *Outlook*, the E-Desktop mail, as *Outlook* is a modern reader with plenty of options. You can use it to check the mail of multiple POP accounts. It has links or "rules" or filters that can be applied to incoming messages.

As with most EDE applications, *Outlook* is accompanied by an HTML manual that provides extra documentation. *Outlook* is a sleek application with a nice appearance. The only thing to look for, for your taste, is a long line wrap option that will take those long paragraphs you have messages and wrap them on screen. *Outlook* *Communicator* has this feature. With *Outlook*, you have to scroll and scroll to the right, leaving the content of the entire part of the paragraph. Once this feature is added, *Outlook* will be a serious challenge.

Read time: finding things on the Linux system

One *Albert* (albert@redhat.com) is a *Linux* based E-Desktop reader and editor who operates a small list of Linux users. He has been in the area of *Outlook* on his list at <http://www.redhat.com>.

6.100
Message 100
After: previous (Sat Feb 11 10:00:00 1995)
Date: Sat, 11 Feb 1995 10:00:00 -0500
From: albert@redhat.com
To: albert@redhat.com
Subject: How does it work?

If you have time to look today, you're a day.

6.



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More DSL offerings for Canadians

TORONTO—San Francisco, Calif.-based NetForth Communications Group Inc. (nyse:netf) is teaming up with Canadian telecommunications company CanWest Enterprises Inc. (nyse:ctw) to give voice broadband-digital subscriber line (DSL) services across Canada.

Called a mix of Canada's largest companies, local telephone carriers (ILECs) and already has equipment installed in 100 telephone company central offices (local switching centers) in 18 major markets.

The two companies said they would be able to take advantage of CanWest's existing

relationships with Canadian businesses and its 18,000 fibre-optic network across the country to move quickly in providing the DSL, a capability which permits high-speed data access over existing copper telephone lines without interfering with voice communications.

"Speed is market critical for the DSL, faster is the U.S. and it will also be the competitive differentiator in Canada," said Michael Hladik, NetForth's chairman and chief executive officer. "By partnering with CanWest, NetForth is strategically aligned with a leader in the Canadian telecommunications market with the network assets and personnel that will enable us to establish in the nation's largest broadband footprint by the end of the year."

CanWest's Sprint Canada subsidiary boasts that it already operates some 25 percent of total fixed-line bandwidth in Canada with its long-distance telephone services. Sprint Canada also has some 180,000 Internet customers, most of whom use its 56-kbps line. In January the Sprint unit announced a reorganization to position itself as a provider of Internet protocol (IP) networking services with a business-to-business focus.

"DSL is an important component of CanWest's new data and IP-based focus," said Kevin Morris, CanWest's president and chief executive officer. "The joint venture with NetForth will also provide CanWest with the high-speed backbone needed to support its business applications with its existing customers through Sprint Canada."

Also joining the DSL fray, Bell Canada is one of several U.S. companies hoping to deliver DSL services across Canadian territory. On the same day in mid-February that NetForth and CanWest released details of their DSL plans, the Canadian arm of U.S. parent PkNet Inc. (pknet) (otc:pknet) also announced the roll-out of DSL services for businesses in Toronto, Montreal and Ottawa and plans to expand to other major Canadian cities by the end of 2000.

The PkNet DSL service will allow for maximum download speeds of 12.8 Mbps and maximum upload speeds of 3.2 Mbps with maximum upload speeds of 3.2 Mbps. PkNet said it is using an technology from NetScout. The service will run over Bell Canada's local loop using DSL facilities provided by Bell. Joining to PkNet's own backbone facilities, said Bryan Bazel, vice president of PkNet in Canada.

Bell Canada, the country's telephone and telecommunications carrier, offers DSL service to its business and residential customers in those provinces with most copper-based carriers in other parts of Canada also provide DSL service.

Like in 1999, the Canadian Radio-television and Telecommunications Commission (CRTC) said the incumbent carriers may must make their local loop available to Internet service providers (ISPs) at reasonable rates as the ISPs can offer their own DSL services. The ruling forced a competitive bidding process to a group of firms and that Canada now has more than 100 ISPs could use their facilities for DSL service.

Broadband PkNet's service will cost \$49.95 monthly plus a one-time \$995 installation fee which includes a router.

Other competitors recently entering the DSL market in Canada include Global Canada (a subsidiary of giant MCI Telecommunications Inc.) and PlayNet Communications Inc. of Springfield, Ohio, which is partnering with Canadian CCI Communications Inc. (a subsidiary of Sprint).

—Anthony...

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When teams go awry

There are a number of popular business teams that exist in virtual and physical forms. With the flood of collaborative and teamwork software now available, it would seem that team interaction is open-air. But making teams work requires exactly that: work. In their book *Why Teams Don't Work* (Doubleday and Monroey, 1997), ISBN: 0750313671, authors Harvey Fishbein and

Michael Finkel describe quite a number of scenarios under which teams may go awry.

The major causes may be grouped into three categories of remaining mostly and potential team consequences for the team. First, there are dysfunctional team members. Consciously or inadvertently members of a team can look group-wide, which allows them to sabotage the needs of the team. In other cases, selection of

team members can lead to serious skill over laps, which can create potential antipathy or even functional conflict when trying to achieve goals. Clearly team members should be capable of not being out or obsolete—dysfunctional team members.

The second problem, B-dilemma teams, is much more serious. Again, it can be exacerbated or avoided. A team without clear goals

and objectives can be created much more readily today with available and markets changing so rapidly. Even when the major goal is set in stone—become the number one company in Internet software, for example—the lack of definition and direction can lead to conflicting efforts. A previous definition of the measure of success—the number one company in Internet Software within the next two years starting with corporate Web development software, followed by a 30 percent or greater market share in all Web browser usage—for example—may make all the difference in the world.

But sometimes top executives do not have a good measure of the market or realistic conditions necessary for success. They can define precise goals, but their teams teams without sufficient resources, solid mechanisms, return-on-investment measures, or the ability to go to strong markets to meet full resource needs when they come due.

Other times a team is deliberately given a Mission Impossible web page and operates as high or near-impossible. But the probability of success is limited without the team following extraordinary efforts, so-called Death March, extreme projects are realistic examples, with no amount of collaborative efforts capable of making the team work.

An engineer I interviewed for a story about expert systems spoke eloquently on organizational collaboration. As a member of a team working on a distributed expert system, he was the lead expert of the team efforts. The team had the least in-groupwork and was progressing well towards meeting its goal. But the engineer's expertise was crucial to the team's success.

He enjoyed working for the corporation and considered himself well paid. But he had some regrets and disliking in other companies. He had decidedly mixed feelings about steering the team to take his unique knowledge and expertise. "I am disliking it I do and disliking it I don't. If I do give up too many of my trade secrets, there is a good likelihood that I and some my friends and colleagues will be lost if when times get tough. If I don't give enough, the team will not succeed, and I as a member will get a damaging mark on my record."

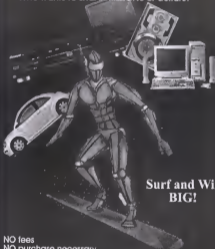
Finally, even given good info, a team can still have it because resources are very tight. Within two months of the interview, the engineer I spoke with had joined another firm. After he left, the remaining members of team did not have enough knowledge to proceed and the project was delayed.

That the problems surrounding collaboration and teamwork have become more complex. If they include, such as communication and too diverse of talent, have not been worked out well beforehand for a project, the team may be heavily loaded by institutional design (or lack thereof). And with big name companies like Boeing, Coca Cola, Intel, and Xerox currently laying off massive numbers of employees, the explicit contract and trust between the employee/team member and the company is weakening very thin. In such, team and collaborative software can certainly reduce the friction and tedious labor aspects of teamwork, but by no means is it sufficient to guarantee the success of the team—especially in a context where institutional trust and humans may be in question.

—Julianne Surver

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When I answered Yes, I was given two options: Upgrade To Windows 2000 or Install A New Copy Of Windows 2000. The first was the recommended option, since it would replace Windows NT but keep all of the settings and the installed programs.

The second, or "clean install" option would erase nothing and force me to reinstall all of the system software. I did choose the first option, but in principle the second is better. It erases more work, but provides a cleaner foundation for the new work.

After agreeing to the licensing terms, I was asked to connect to Microsoft's Windows compatibility Web site, generally to check on any BIOS/Windows problems and the design of using an uncompatible BIOS. If I had been using an older computer, I would have been more concerned. I continued with the installation, as confident as before.

At this point, I encountered a warning about some programs needing upgrade packs to work with Windows 2000 that I had never seen in any of the beta versions of the CD. The warning

directed me to confirm that your software is compatible with Windows 2000 or that service packs are available, before continuing to the upgrade. While only Microsoft software on my system, I had no doubts. Your warning may mean more to us, because we're testing... to put it mildly.

Next, I was given the opportunity to upgrade my file system from FAT32 to NTFS. Windows 2000, unlike Windows NT 4.0, supports FAT32, but NTFS is superior. If I had wanted to have a dual boot with Windows 9x, I would have retained FAT32.

At this point, I started my stopwatch. The installation procedure predicted that it would take 30 to 45 minutes, plus additional time to convert to NTFS. The procedure mirrors the complete disk install, but everything is automated. You don't have to wait around to answer questions.

Just after the five-minute mark, the conversion from FAT32 to NTFS began. At 15 minutes, the procedures started to detect and install drivers. At 17 minutes, it commenced the installation of networking components and began to install Windows 2000 components.

By the 23-minute mark, it was installing Start Menu items, performing upgrades to programs and system settings, and restoring temporary files.

At the 35-minute mark, I was in a Personal Center screen, and just after 38 minutes, I was up and running with Windows 2000 Professional.

My first step was to try my applications. Everything, including Internet Explorer, worked as before. All of my settings were correct.

The compatibility report at the beginning of the installation flagged the Internet graphics adapter. It is not currently supported in Windows 2000, which I knew but I wanted to see what would happen with an unsupported component. Windows 2000 used a generic VGA driver, which works fine within the limits of the resolution and color depth it offers.

After spending some time in my new Windows 2000 Professional installation, I tried a different installation technique. Most modern computers have a BIOS that supports booting from a CD-ROM. After installing my BIOS, I was able to start what I called it worked flawlessly.

As a bonus, I was given the opportunity to delete and to create partitions on my disk prior to the start of the installation routine. I took advantage of this, and less than an hour later, I had a brand new Windows 2000 installation on a newly partitioned and formatted disk.

You can find more information on my new OS at <http://www.microsoft.com/windows2000>.

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Palm OS to support Adobe PDF

Adobe Systems and Palm Computing, a 3Com company, have announced their intention to integrate the Adobe Portable Document Format (PDF) technology into the Palm Computing platform.

The companies say the agreement is designed to support the growing consumer market for electronic publishing, and to bring a new level of convenience and portability to mobile customers. It will provide Palm users with new content, from e-books to business workflow documents.

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WHAT'S NEW

Wearable PCs to power up with water

EXPERIA, May 4—A new initiative from Portland-based Ecton Corp. (www.ecton.net) and OGI Technology Inc. may see the wearable computer produced by Ecton and being partially powered by the future by water.

Ecton and Valencia, Calif.-based OGI need they would partly develop a wearable PC that would not be hydrogen-fuel cells. Recharging those cells would simply require filling them with water, according to Ecton's director of corporate communications, Peter Stone.

Currently, a single lithium-ion battery can power Ecton's wearable computer for three to six hours, depending on the applications used. Stone said, A second battery can be swapped in without starting down—the life of about eight hours of power and use. However, the new fuel cells may run from 10 to 24 hours, Stone said, and recharging them will be as easy as opening a water tap. Stone said the announcement signifies "just the first step in the development process."

Ecton's Mobile Assistant (MA) IV contains a fully functional Intel Pentium MMX processor and other add-on-outlet flat-panel display and a 300-gram base-mounted display that can be equipped with an optional video camera. Other accessories and software are also available. The MA IV can run Windows 95, NT 4.0 and RealTimeLinux. Pricing for the MA IV with a flat-panel display starts at US\$4,995, while real-time Linux display systems start at US\$3,995. The systems are available direct from Ecton.

—Anastasia

Microsoft protects children's privacy

Microsoft has launched Microsoft Kids Passport, a new service designed to help parents protect their children's online privacy.

By using Kids Passport, parents will be able to decide on a day-by-day basis whether they want to allow their child to use participating Web sites, services that collect and distribute personal information from children. Passports are unique to the individual child and allowing parents to make consent decisions appropriate for each child. Participating sites also require parental consent or limited Kids Passport members from using content such as newsgroups, chat rooms, and game programs in which children might provide personal data.

The service is automatically available to Web sites that sign up to use the Microsoft Passport single sign-in service. Other sites interested in the Passport service can get more information at this Web page: kids.msn.com.

So far this service is currently only available to the U.S., but Microsoft Canada says it will be monitoring the success of that service and will evaluate it for use in Canada.

—Keith Schuchman/Reuters

Parody a hit... make that millions of hits

The developers of Parody.com-based Child Focus.com Online have a hit on their hands with MSNopoly (aka Parody.com's parody monopoly), a better idea site created in the wake of the recent ruling by U.S. courts that Microsoft is a monopoly.

The site looks like a monopoly game board, and visitors can get with details of evidence brought against Microsoft by clicking on the squares that form the board. In some circles don't show their cards of Parody.com the designers have created an online form complete with pull-down menus for registering as users to take games just a few mouse clicks.

ChildFocus.com (<http://www.childfocus.com>) says that in the week following the site's launch in Houston, it had more than 640,000 hits—(USA) visitors came from Microsoft's IP addresses. On the lawsuit site—where the URL was posted at ChildFocus.com—it registered 3,184 hits.

ChildFocus.com operates an online ad network that focuses on promoting well-to-medium-sized Web and e-mailing advertisers who want to deliver their message to a more targeted audience. Not surprising in light of its sales site, ChildFocus.com says it is also active in the open source software and Linux community.

—Ladger/Reuters



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WHAT'S NEW

Roche unveils Canadian portal

TOPICNET—Canada's national communication comprises now each have a U.S. heavy-weight in their corner to boost their Web portal efforts. Recently Rogers Media Inc., a division of Rogers Communications Inc. (listed under Roche Canada <http://www.roche.ca>), a joint venture with National City, Calif.-based EbscoInfo.com.

A month earlier, Bell Canada had announced that it was teaming with Lycos Inc. to use the e-commerce company that would manage its portal business. Bell Canada, owned largely by BCE Inc. of Montreal, owns a majority stake in that venture, which is called **SuperiorAccess** in recognition of the Lycos brand and Bell's ISP business, Sympatico.

Rogers Communications, whose new cable-based Premium ISP business got the jump on high-speed Internet services in parts of Canada while Sympatico was still offering only dial-up service, now gives the BellInfo.com cable Internet offering enough to keep under a Progenetix time table.

Like Roche.com in the U.S., Roche.ca features channels such as automobiles, current computers, health and real estate, which help organize its portal content. Roche.ca content partners include Rogers subsidiaries (Shoppers, Channels and Canadian Business), former site Outpost Inc. and Internet services such as the Canadian Press and the Associated Press.

—*Newsday*

Explains for handhelds previewed

HOECHST—Germany's electronic giant has now Internet Explorer for the Pocket PC of the Catalyst series in Germany in early March. The company says the Web browser software, intended for use with the Pocket PC handheld devices demonstrated in January shows users to access "any Web site any time, anywhere—whether they are connected to the Internet or viewing content offline."

Pocket PCs are expected to ship in the first half of this year from such hardware manufacturers as Compaq, Hewlett-Packard, Siemens and Symbol.

Pocket Internet Explorer reportedly includes such uses of user technology as a "book-to-PC capability, which "dynamically creates a Web site to maximize viewing" on personal digital assistants (PDA) a "smart address bar" which lets users type in a Web address by anticipating Web site locations, and Auto sites, which "automatically determines if the device is connected to the Internet and, if not, automatically directs the browser to a cached version of the Web page." Pocket Internet Explorer also supports HTML, potential markup language.

Rolf Peter Wenz, director of marketing for the mobile device division of Microsoft, "Internet access on the Pocket PC will provide customers with the key functionality they have come to expect from the Web via a standard PC, including photo-quality screens that display the rich images and graphics the way the Web designer intended."

—*Newsday*

Encompass unveils next-gen devices

HOECHST—Germany's electronic giant has now more mobile phones, available in QinetiQ, a group of mobile devices, including several of four new cellular "portal"—mobile communication devices that support web-based applications.

Encompass communications includes, the G300, G300, G310 and G320, as they are called, feature the i-mode phone, but without the necessary separate keypad, or display, since they enable wireless communications made via e-mail.

The Encompass communications vendor says these modules can be built into a wide variety of equipment, including domestic appliances, industrial machinery, mining equipment and vehicles, thus automating a lot of functions.

The G300 is a dual-band (900 MHz/1900 MHz) GSM mobile handheld device, built around messaging system, and has. The G300 is also a dual-band GSM module, but handles voice and data in addition to GSM and fax.

The G310, meanwhile, is a dual-band (AMPS and GSM) mobile device, multiple access, 900 MHz module, handling voice, fax, and data. Finally, the G320 for AMPS 900 MHz and GSM 900 MHz/1900 MHz module, handles voice, fax, and data.

Jon Aronson, vice president of Encompass Mobile Communications, said he foresees mobile communications devices becoming key players in the mobile content industry. "The entire integration of a wireless mobile into a wide range of manufactured products is already beginning and will soon be taken to greater heights as the integration of the (wireless) is being," he said. "We believe that the market will expand more rapidly in areas such as the automotive industry, fleet management, healthcare, and utilities," he added.

Manufacturing said the modules are intended for use in both new and existing machinery to machine applications where there is a need to send and receive data or SMS, as well as in emergency applications.

—*Newsday*

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Advertising Inquiries

Phone: (604) 688-2120 Fax: (604) 688-4270

Editorial Inquiries

Phone: (416) 588-1588 Fax: (416) 588-6574 Toll Free: 1-(800) 465-3517

Editorial: tcpeditorial@tcp.ca

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ASUSTeK COMPUTER INC.
 4000, 40th Avenue East, Suite 200
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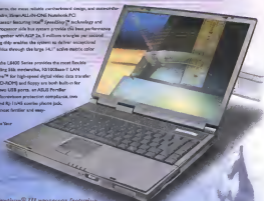
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Johnny Canuck vs. the Brain Eaters



With "government by Three Stooges" characterizing national politics,

how will Canada stay in the high-tech race?

For those who follow national affairs, the debate in the last past concerning the Brain Drain—the flight of high-tech and entrepreneurial talent to the U.S.—has taken on a fascinating twist into the always-storied Canadian national mythos: Canada, the country that the United Nations seems to have gotten into a habit of naming the best, in the world to live in (what a shock to our self-esteem when more often seems to come when the press, some to cautiously doubt as they likely to continue as tradition as a discovery.

Whether the cause of our rage, the fleeing about Canada's innovation down to the back of the brain drain of Silicon Valley seems unprovoked. But even in the debate over Canada's future seems to agree that the country's most critical resource is its brightest young minds, and as an emerging proportion of these minds are seen to be leaving country-wide. But, at the same time, those minds of elite (bright) young people flock to Canada, and in our universities and high-tech industries, from nearly every other country in the world. In the business of Brain Drain, Canada may actually be making a slight profit.

As we mentioned in a "Last Time" more than a year ago, John Brink, the chief executive officer of Norbit Networks, blamed the federal government's cautious policies for the difficulty of keeping our best high-tech talent at home. Since then, both he and several of his associates, admitting their parts of the problem



THE LAST TIME

Prime Minister Jean Chretien vigorously mocked the resistance of a Brain Drain—an excuse winning off those Canadians who dislike to leave Canada—the federal government did more recently admit that the loss of top intellectual talent was

serious, and that measures were contemplated, and in charge Canadian business men to allow more Canadian entrepreneurs to get rich at home. It may be that a dozen Canadian companies in the making. Perhaps in the high-tech policy sector, the government will attempt to balance the competing needs of unbridled national social progress, encouragement of economic growth and growth in high-tech risk-taking and related careers.

Capital venturing forth less freely
While a critical period of investigation, research and planning seems to characterize much of Canada's federal and provincial politics, the country is actually doing a lot of

unexpected American expansion of the 21 technology IPOs (Initial public offerings of stock) listed in Canada in 1998. It was initially predicted to increase. The Canadian business men getting into the high-tech investment game with venture capitalists, and the pool of venture capital funds available to help start new technology companies is expanding.

One of the bright spots on the technology venture capital fund is 21X Capital Corp. Corp. (the firm of 2001), a company partly founded by ex-Delmona Corp. executives. Delmona, a Canadian software company recognized internationally for developing Windows-based software, was purchased in 1996 for more than \$100 million by U.S.-based Symantec Corp. Delmona co-founder, Dennis Delmona, took his share of that wealth, and, with some associates, moved 21X, specifically in that, invest in and manage promising Canadian technology startups. An initial investment fund of \$11 million was recently launched by \$100 million.

In early February, Bob Young, the co-founder and president of Lotus software giant that had come to Toronto to announce his participation in the 21X advisory board, in conversation with The Computer

Forum, Young pointed out that had that decision been to move the prior two paragraphs of the software business on as head by concentrating the Lotus investments, in Young's opinion, Canada's education system problems would have talented management and technology.

Young stated that he believes there is merit to the "Silicon Valley" theory of economic development. Where there is a critical mass of talent and some strong venture capital fund in some specialty, it's possible to build globally competitive companies and even industries. Canada, Young says, has a tradition of universities in telecommunications, networking, broadcasting, and graphics software. Much of this can be traced back to the physical requirements of thinking together a huge, thinly populated country.

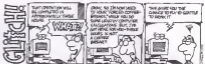
Young believes in "building an ecosystem" to promote growth, in the Canadian technology field. One reason for the disproportionately large influence of the Internet in global economy is that it has provided huge opportunities for the growth of new companies. If Canada can create an environment that fosters the development of its talented country and skills, it can compete in the rapid growth of the global technology powers. □

The Yankees were using dastardly tricks to snare unwary Canadian talent, including free tickets to San Jose Sharks hockey games. The horror!

a scenario, a business note was added to the debate in the summer, when Norbit attempted to set an American network technology firm, which Norbit alleged was making a campaign to lure Norbit's key engineering executives to California. The business note was clearly aimed to scare away Canadian talent, including four visits to San Jose Sharks hockey games. The horror!

Most recently, the federal government has indicated it is considering changes to immigration regulations to allow Canadians to invest more freely in entrepreneurial ventures (to let Canadian dollars pursue the highest

things right, in terms of building a vigorous digital economy. Although the Canadian high-tech investment market is not ready to action in the



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